Merrychef

SERVICE MANUAL

Mealstream 400 SERIES

SERVICE MANUAL

Part No. 32Z3769 Issue No. 1

For all 400 Series models manufactured from February 2009

CAUTION MICROWAVE EMISSIONS

DO NOT BECOME EXPOSED TO EMISSIONS FROM THE MICROWAVE GENERATOR OR PARTS CONDUCTING MICROWAVE ENERGY

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SAFETY CODE

This manual is designed to assist engineers who have been on a recognised product familiarisation and training course run by Merrychef Limited. It has been prepared to offer technical guidance for the Merrychef Mealstream 400 range of Combination Microwave Ovens.

Please remember that it is wiser **not** to attempt a service task if you are unsure of being able to complete it competently, quickly, and above all **safely**.

To avoid injury to yourself, and to protect the appliance from possible damage, please follow this Safety Code when servicing these ovens.

Before attempting to repair the oven, check it for microwave leakage.

Check that the oven is not emitting microwaves, even when supposedly not in operation.

Check that the oven is not operating continuously, whether the display indicates cooking or not.

Always discharge the HT capacitors before working on the oven using a suitably insulated 10 MΩ Resistor

Before removing the rear cover from the oven ensure you do the following:

- Switch off the mains supply and remove the plug from the wall socket.
  or
- If the oven is hard wired, ensure that the power is turned off at the isolator switch.

Note: the On/Off switch on the oven is **not** adequate protection against electric shock, as it does not isolate all of the internal wiring from the Electrical Supply.

Upon completion of a service on a Mealstream 401/403 oven, or before reconnecting the appliance to the mains supply for testing, check all of the following points:

- All internal electrical connections are correct.
- All wiring insulation is correct and is not touching a sharp edge.
- All Earth connections are electrically and mechanically secure.
- All four door safety interlocks are secure and mechanically sound.
- The door operation is smooth, and the arms run freely in the slots.
- The door activates all four of the door interlock switches **in the correct order**.
- All fuse-holder safety covers are correctly fitted.
- The temperature sensor is correctly connected to the Power PCB.

Before finishing the service call, recheck the following points:

- All of the electronics are functioning correctly, and all of the touch pads are working.
- The turntable is rotating correctly.
- The power output of the oven is correct (see pages 12 & 13).
- Microwave emission is below permissible limit - 5 mW/cm² (see BS EN 60335-2-90).
- Oven has correct 50mm air gap all round and 150mm above.
  Air flow should not be restricted.

Product specifications: Mealstream 401 & 403 models

ELECTRONIC CONTROLS: (EC401 & EC403 models)

Model N$^{o.}$: 1003 + Voltage + Frequency + Current + Controls ——

—— **+ Phase + MenuKey + Catalytic converter**

For example: **100345XE52MK**
230-240V, 50Hz, 30A, Series 5 Controls, Twin Phase, MenuKey

Model prefix	Voltage	Frequency	Current	Control Type	Supply Phase	MenuKey	Catalytic converter*
1003	**2** = 220-230V a.c. **4** = 230-240V a.c.	**5** = 50 Hz **6** = 60 Hz	**EE** = 13A **XE** = 30A **XX** = 30A	**5** = Series 5 controls	**2**= Twin Phase	**MK**	**C**

* A Catalytic converter is fitted to Mealstream 403 models only

MANUAL CONTROLS (CD & XD models)

Model N$^{o.}$: 1003 + Voltage + Frequency + Current

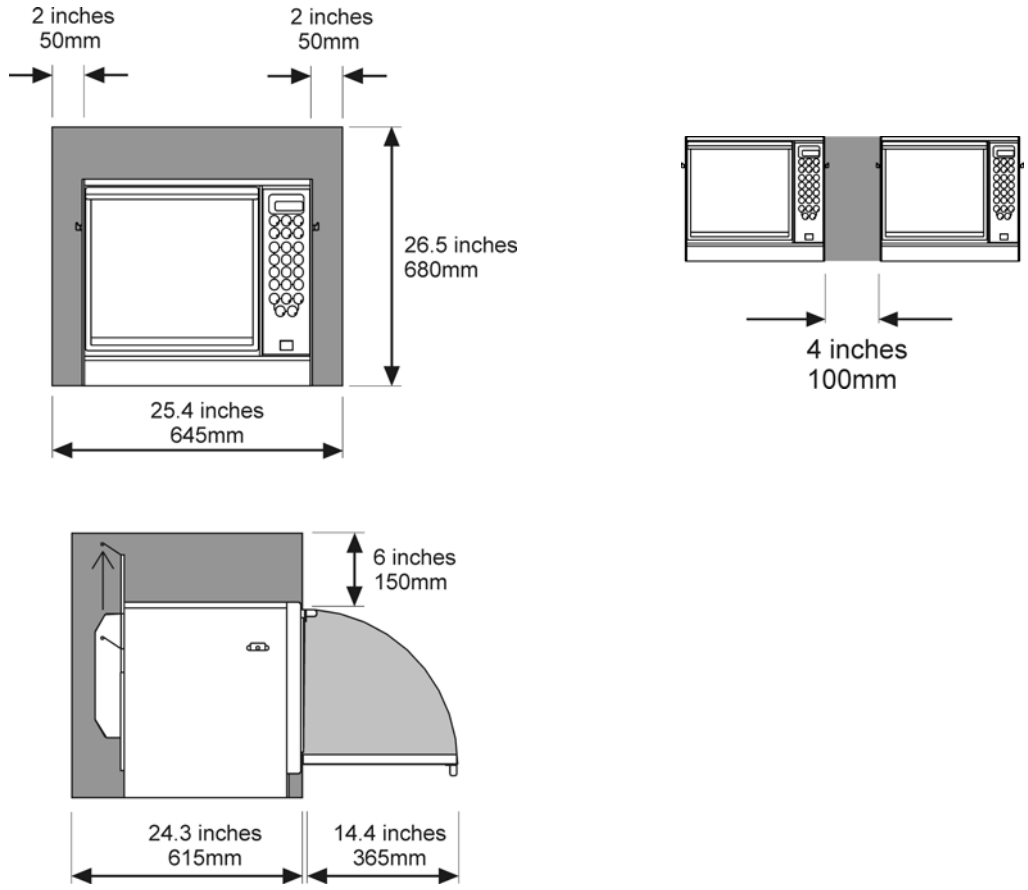
Model prefix	Voltage	Frequency	Current
1003	**2** = 220-230V a.c. **4** = 230-240V a.c.	**5** = 50 Hz **6** = 60 Hz	**CD2** = 13amp **XD2** = 30amp

Power Requirements		See RATING PLATE on rear of oven
Power Output (IEC 705)	Microwave 100% Convection Combination	700W (_EE, _XE) 3000W (_XX5) 700W + 1500W (_EE) 700W + 3000W (_XE) 1000W + 3000W (_XX5)
External Dimensions	Height Width Depth	530 mm (Plus 150 mm minimum clearance above) 550 mm (Plus 50 mm minimum clearance each side) 575 mm (Plus 50 mm clearance behind)
Internal Dimensions	Height Width Depth Turntable Capacity	315 mm 330 mm 330 mm 300 mm Diameter 34.3 litres
Weight	Nett Gross packed	All models except XX5 45kg, XX5 55kg All models except XX5 58kg, XX5 68kg
Construction	Cavity Casework	Stainless Steel 304 Stainless Steel Anodised Aluminium Extrusions
Settings	Microwave Temperature Timer	100%,75%,50%,25%, Convection only Off, 175°C, 200°C, 225°C, 250°C, 275°C Up to 30 minutes Up to 3 cooking stages of up to 30 minutes each (Programmed)

Installation instructions

Positioning the Oven

In order to maintain adequate ventilation for air intake and exhaust, and to allow access for cleaning the air filters, you must allow a minimum of 50mm(2 inches) clearance at the sides and rear of the oven, and at least 150mm above.
Air intake temperature should not exceed 35°C (95°F).
Excessive temperature will lead to reduced operating duty cycle or premature ageing of internal components.



NEVER Install an oven above fryers, grills, griddles or any other major heat source.

NEVER Stack machines on top of each other - always use a double stand.

ALWAYS Place containers in the cavity carefully - impact damage may chip the vitreous enamel coating.

Electrical installation:

WARNING: This appliance must be earthed.
Failure to do so may result in electric shock and death

WARNING

All models (30A) must be connected to a separate electrical supply rated at 30 Amps by a qualified and approved electrician. A suitable 30 amp rated isolating switch with a 3mm contact gap on both poles should be fitted for each oven installed.

Establishments with standard (Type 'B') circuit breakers are sensitive to 'surges' which occur on switching on freezers, refrigerators and other catering equipment, including microwave ovens. Because of this, we strongly recommend that a separate Type 'C' circuit breaker (designed specifically for this type of equipment) must be fitted. An individual, suitably rated circuit breaker should be fitted for each oven installed.

Models 1003__EE5, 1003__CD2
The power outlet used must be individually fused. It is essential that the socket is properly installed and earthed. It should be fed from a circuit which is suitable for high power electrical appliances and it is important that this circuit is not overloaded.

Where an approved and fitted moulded plug is supplied we strongly recommend that this plug is never removed.
However certain establishments may require a different plug to be fitted. In this case, the wiring instructions shown should be observed.

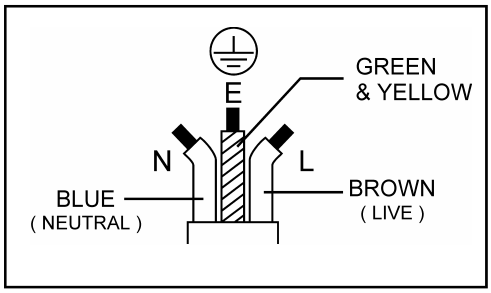


Diagram 1

Models 1003__XE5, 1003__XD, 1003__XX5
When supplied, single phase models are fitted with a Blue 32Amp Plug approved to BS4343. Wiring cable colours as shown in Diagram 1

The Circuit Breaker should be rated at 45A (TypeC).

TWIN PHASE

Models 1003__XE52, 1003__XX52

The Mealstream 401 oven Twin Phase models should be connected as shown in Diagram 2.
The Circuit Breaker should be rated at 20A per phase (TypeC).

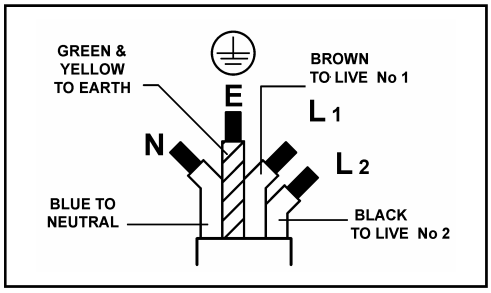
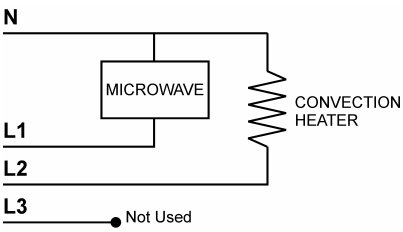


Diagram 2

Simplified loading Diagram



Error codes and diagnostics

Electronic Control Models
The control panel will identify some of the most common problems by flashing an error message code in the time display window.

Error Message		Possible Cause	Service
	1 2	Door not fully shut Possible electrical fault	Close door fully. Check Microswitch Door Circuit Check Microswitch Connection to PCB Check Ribbon Cable Check Relay PCB & Logic PCB
	1 2 3 4 5	No time has been set Invalid time has been set Invalid program has been set Number pad failure Memory Failure running a Program	Set a time Set a valid time Use call-back to check program (Menukey: no key downloaded) Membrane key short circuit Re-Program Pad, if fault repeats replace Logic PCB
	1	Oven is not at correct temperature to start program	Allow oven to reach correct Programmed temperature
 EPS= External Program System	1	MenuKey removed before the download is complete or the process has been interrupted	Switch oven off and begin the MenuKey download again
	1	Magnetron overheated	Air inlet on rear of machine being obstructed. High air inlet temperature. Slow running cooling fan, jammed turntable or broken gearbox (cooling fan also drives turntable _XE5 models) Faulty magnetron overheat 'stat or associated wiring.
	1	Jumper installed incorrectly on PCB logic board	Check Jumper position
 [Service]	1 2	Magnetron has overheated but has now recovered Internal diagnostic fault	Check that magnetron cooling fan and turntable are working correctly Check installation, air inlet temperature and air filters
 [Air Filter blocked]	1	Oven control area is overheating	Check air filters. Check axial fan Check installation for hot air intake

Error Light Operation

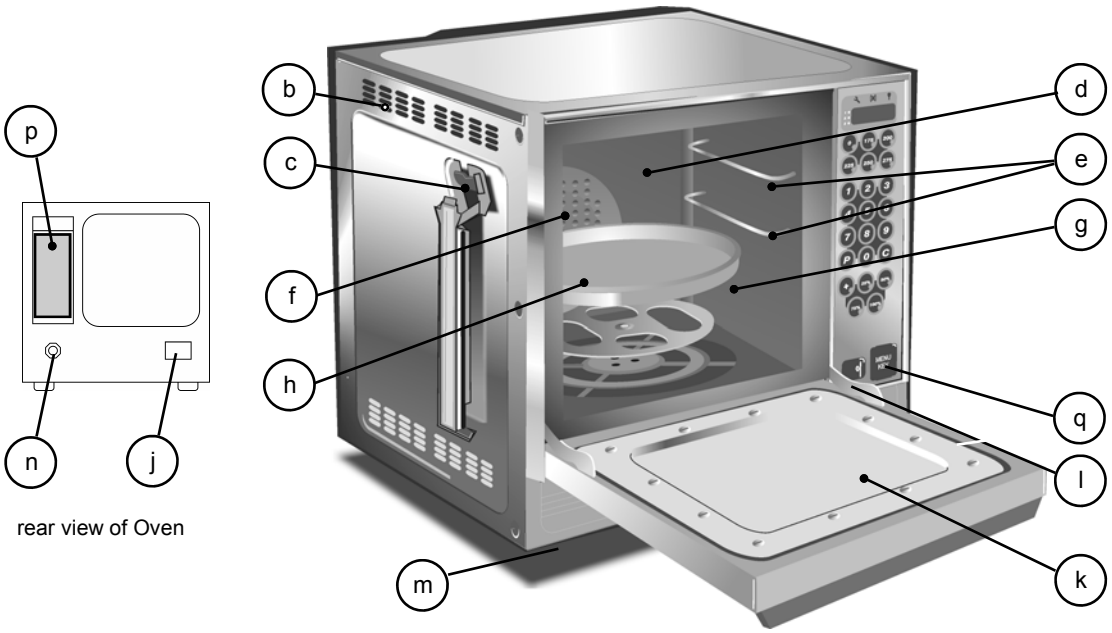
The "Air Filter Blocked" light and "Service" light are triggered by the internal circuitry. If the magnetron overheats, the error code "E:7" or "E:8" is displayed on the front panel, and both the "Air Filter Blocked" and the "Service" indicators will light. Once the magnetron has cooled sufficiently to allow the oven to restart, the "Service" light will remain illuminated until the oven is turned off.

This fault may have been triggered by one of the following causes:

- Air inlet on rear of machine being obstructed.
- High air inlet temperature.
- Slow running cooling fan, jammed turntable or broken gearbox
  (note: cooling fan also drives turntable on EE5, CD2 and XE5 models).
- Faulty magnetron overheat 'stat or associated wiring.

Note that the customer may not have noticed that the oven displayed "E:7" or "E:8", and so the reported fault may be misleading.

Main features



rear view of Oven

b VENTS

c TRAY HANDLE RESTS

There is one on each side of the oven for convenient storage of the tray handle.

d BAFFLE PLATE

Forms the inside rear of the oven and covers the hot air circulation fan. Removable for cleaning by unscrewing the four wing nuts which hold it in place. This must be cleaned on a regular basis, and kept free of debris.

CATALYTIC CONVERTOR

Allows extraction free cooking. Should be removed regularly for cleaning. (Do not spray/ put caustic cleaner directly into the catalytic converter as this will cause permanent damage)

e RUNNERS

These mounted on each side of the oven cavity to support the rectangular racks or oven trays, and are for use in **CONVECTION MODE ONLY**.

f HOT AIR FAN

Situated behind the baffle plate, and circulates the hot air through the baffle plate, over the heating element, and around the edge of the baffle plate back into the cavity.

g OVEN CAVITY

The oven cavity is stainless steel. It must be kept clean See CLEANING.

h TURNTABLE TRAY

The vitreous enamelled turntable tray fits onto the turntable disc in the bottom of the oven cavity, and rotates during cooking to ensure an even distribution of microwave energy so that the food is cooked evenly.

j RATING PLATE

The rating plate is situated on the rear of the oven, and states the Model, Serial Number, Electrical Ratings and Manufacturers Tel no.

k DOOR

The door consists of a thermally insulated inner section, and an additional air gap provided by a twin skinned door front to lower the surface temperature.

l ON/OFF SWITCH

This is used to turn the oven On or Off.
IT DOES NOT ISOLATE INTERNAL WIRING FROM THE ELECTRICAL SUPPLY.

n ELECTRICAL SUPPLY LEAD

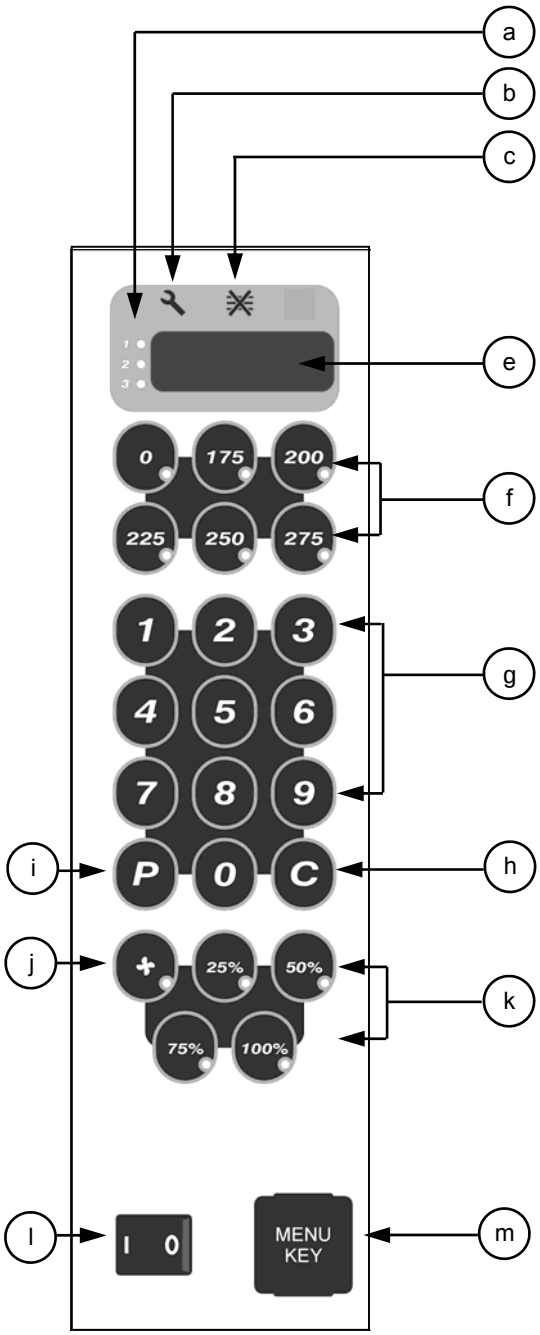
p AIR FILTER

Main intake for cooling air for internal components. Must be clear of obstructions.

q MenuKey

Electronic controls:

a	Stage LED's
b	Service Indicator
c	Air Filter Block Indicator
e	Program Display
f	Temperature Set Pads
g	Time / Program Number Pads
h	Cancel/ Callback Pad
i	Program Pad
j	Convection Pad
k	Microwave power Pads
l	On/Off switch
m	MenuKey socket



Procedure B - Simplified Power Output Test for Field Service Use

You will need:

Procedure A - Power Output Test In accordance with BS EN 60335-2-90 is not used in the field please Engineers Procedure B.

A thermometer capable of reading to ±0.1°C.
A Polypropylene tray approximately 200 mm x 200 mm.
A measuring jug.
A calculator.
Water which is at a temperature of 10°C ± 2°C.

1 Measure 1 litre of cold water into the tray using the measuring jug.
2 Measure the water temperature, and record it as T[s].
3 Place the tray on the turntable in the oven and close the door.
4 Turn the oven on.
5 Set the timer to 1:02. (For Manual controls use a stopwatch set to 1 minute 2 seconds)
6 Press the “100%” power pad.
7 When the oven bleeps, open the door and remove the tray.
8 Stir the water thoroughly, and measure its temperature. Record this as T[e].

Calculation:

1 T[r] = T[e] - T[s].
2 Power = 70 x T[r]. Power is in Watts.

The power given by the above test should be within ±10% of the rated power.

Procedure C - Power Transformer Test

You will need:
A Digital Multi-meter (D.M.M.)
A Megger or similar resistance meter using 500V d.c.

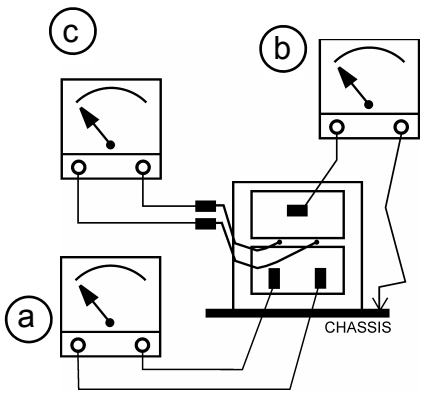
1 Isolate the oven from the mains supply.

WARNING: *High voltages and large currents are present at the secondary winding and filament winding of the Power Transformer. It is very dangerous to work near this part when the oven is on. NEVER make any voltage measurements at the High Voltage circuits, including the magnetron filament.*

WARNING: *Even when the oven is not cooking, the Power Transformer has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.*

2 Ensure that the High Voltage Capacitor is discharged before commencing work.
3 Remove all connections from the Power Transformer.
4 Using a D.M.M., check the continuity of the windings. Results should be as follows:

a	Mains winding between tags	Approx. 1.3 Ω
b	High Voltage winding	Approx. 50-100 Ω
c	Filament winding between terminals	Less than 1 Ω



5 Using a Megger, test the insulation resistance between:

Primary winding and chassis	Pass if over 10 MΩ
Filament winding and chassis	Pass if over 10 MΩ

One end of the High Voltage winding is connected to the chassis, so this is not tested.

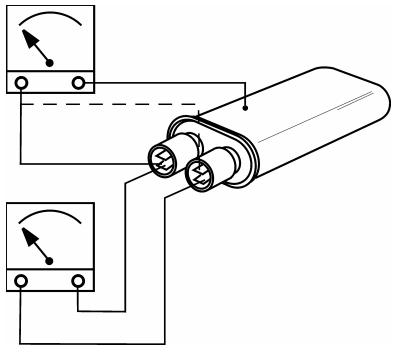
Procedure D - High Voltage Capacitor Test

You will need: A Digital Multi-meter (D.M.M.)
A Megger or similar resistance meter using 500V d.c.

WARNING: High voltages and large currents are present at the High Voltage Capacitor. It is very dangerous to work near this part when the oven is on. **NEVER** make any voltage measurements at the High Voltage circuits, including the magnetron filament .

WARNING: Even when the oven is not cooking, the High Voltage Capacitor has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the High Voltage Capacitor.
4. Using a D.M.M., check for continuity between the terminals &



Between Terminals	Pass if approximately 10 MΩ
Between Terminals and Case	Pass if open circuit

5. Using a Megger, test the insulation resistance between the terminals and the case.

Between Terminals and Case	Pass if over 100 MΩ

Procedure E - High Voltage Rectifier Test

You will need:

A Megger or similar resistance meter using 500V d.c.

WARNING: High voltages and large currents are present at the High Voltage Rectifier. It is very dangerous to work near this part when the oven is on. NEVER make any voltage measurements at the High Voltage circuits, including the magnetron filament .

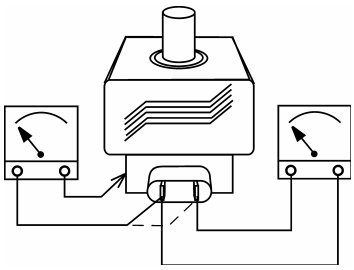
WARNING: Even when the oven is not cooking, the High Voltage Rectifier has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the High Voltage Rectifier.
4. Using the Megger, test for continuity in both directions. Compare results with the table.

Open Circuit both ways	**FAIL**
Conducts one way only	**PASS**
Short Circuit both ways	**FAIL**
Conducts one way, leaks the other	**FAIL**

Procedure F - Magnetron Test

You will need:
A Megger or similar resistance meter using 500V d.c.

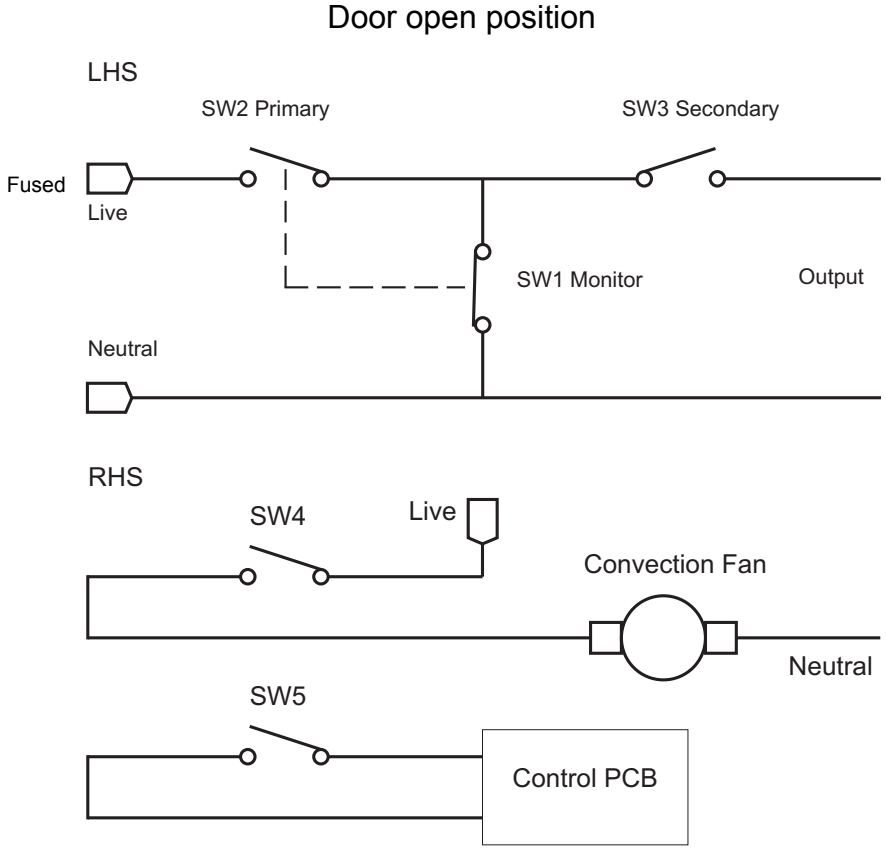


A Magnetron can be tested for an open filament or a short circuit by carrying out a continuity check.

1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the Magnetron.
4. A continuity check across the Filament terminals should be 1ohm or less
5. A continuity check between each filament terminal and the metal outer should read open.

Door interlock operation

The door on the oven is monitored by five microswitches. Three of these are used in the conventional “Primary, Secondary and Monitor” switch arrangement shown below, while the fourth is a low-voltage switch linked directly to the control circuitry and the fifth switches the power to the convection motor.The switches operate as follows:



SW2 Primary Interlock— located on the left hand side of the oven. Directly disconnects the supply to the microwave generating circuit and thereby cuts off the microwave emissions from the oven when the door is opened.

SW1 Monitored switch—located on the same assembly as the primary. The Monitor switch will produce a short circuit across the mains supply if the Primary interlock switch is faulty, thus blowing the microwave fuse and rendering the oven inoperative.

SW3 The Secondary interlock—located on the left hand side of the oven and like the primary switch will cut off the microwave emission and will do so even if the primary and monitored interlock have failed open circuit.

Note: If operation of the Monitor switch has caused the Microwave Fuse to blow, the Primary and Monitor microswitches must be changed, as they may have been damaged by the high short-circuit currents involved.

SW4 Convection fan switch—located on the same bracket as the control switch. This switch is wired in series with the convection motor supply and will disconnect when the door is opened.

SW5 Control switch—located on the top right behind the display connects to the logic control PCB on a black and white twisted pair of wires. It is this signal that is used by the control circuit to determine the door position. A closed contact indicates a closed door.

Procedure for Door Interlock and test:

WARNING

Before adjusting the microswitch assemblies ensure that the oven has been isolated from the electrical supply and discharge the HT Capacitors.

Please note the terminals on the microswitches remain live when the oven is switched off, so complete isolation is essential.

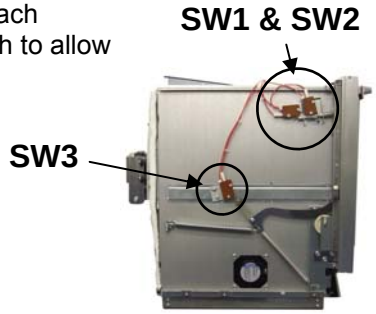
Tools Required: Door Spacer Kit P10H0129, Multimeter

The purpose of this procedure is to set the interlock so that when the door is opened more than 3mm the Oven microwave circuit is switched OFF.

The door closed position [Microwave circuit ON] is actually set with a 1mm opening to allow for heat expansion when the oven is operating at full temperature.

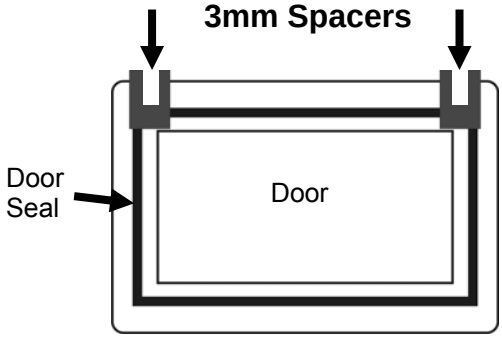
Five Microswitches:
SW1, SW2 & SW3 door interlock Microswitches are located on the LHS of the oven.
SW4 & SW5 are located on the RHS of oven behind the control panel.
SW4 switches off the convection fan
SW5 sends a 'door open' signal to the Control Board

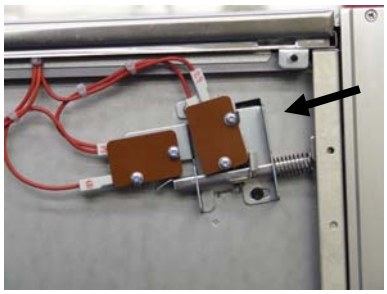
1 The three interlock Microswitches are located on the LHS of the oven.
Release the 2 screws retaining each microswitch assembly just enough to allow the assembly to move.



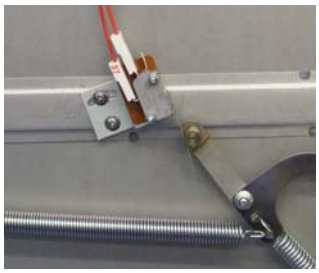
2 Position the door open with a 3mm gap:

Place the two **3mm Spacers** over the door seal at the top of the door on each side at the corner and carefully close the door ensuring the spacer is on the door seal.





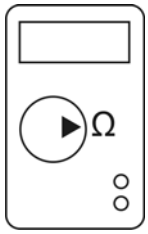
To set Microswitches **SW1** & **SW2 and SW3** to **OPEN** [OFF] at a door opening with a 3mm gap:



Slide forward Microswitch assembly to set **SW2** to just click **CLOSED** and then allow the assembly to move slightly approx. 0.05– 0.10 Inch (1-2mm) to just allow the switch to return to the **OPEN** position and tighten both screws.

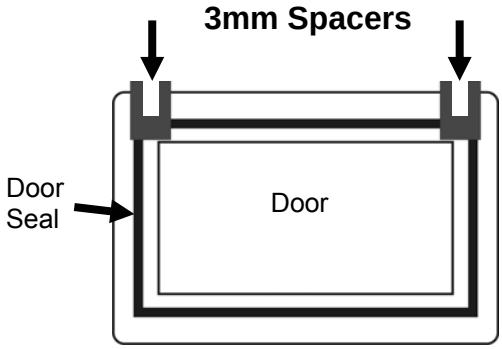
Repeat for **SW3** rotating clockwise to **CLOSED** until it just opens then anti-clockwise slightly to the **OPEN** position and tighten screws.

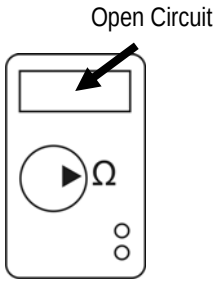
3 Remove the 3mm spacers and open and close the door 2 or 3 times to allow the parts to work together.



Set a Multimeter Resistance [Ω] and connect the meter to the microswitch terminals 37 & 29.

Replace the **3mm spacers** on the door and over the corners of the seal as before.

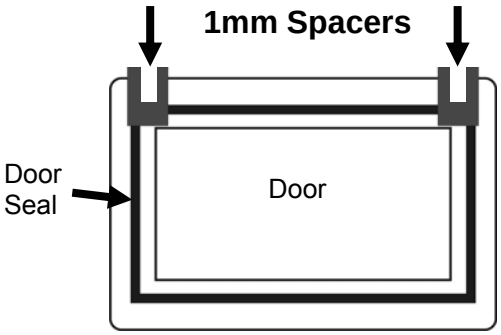


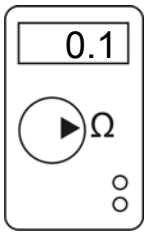


The meter should now read open circuit,
if not repeat steps 1 & 2 adjusting the switch assemblies slightly upwards, ensuring the Microswitches are in the **OPEN** [OFF] position.

4 To confirm the oven operates at a 1mm door open position.

Replace the 3mm spacers with the two **1mm Spacers**.

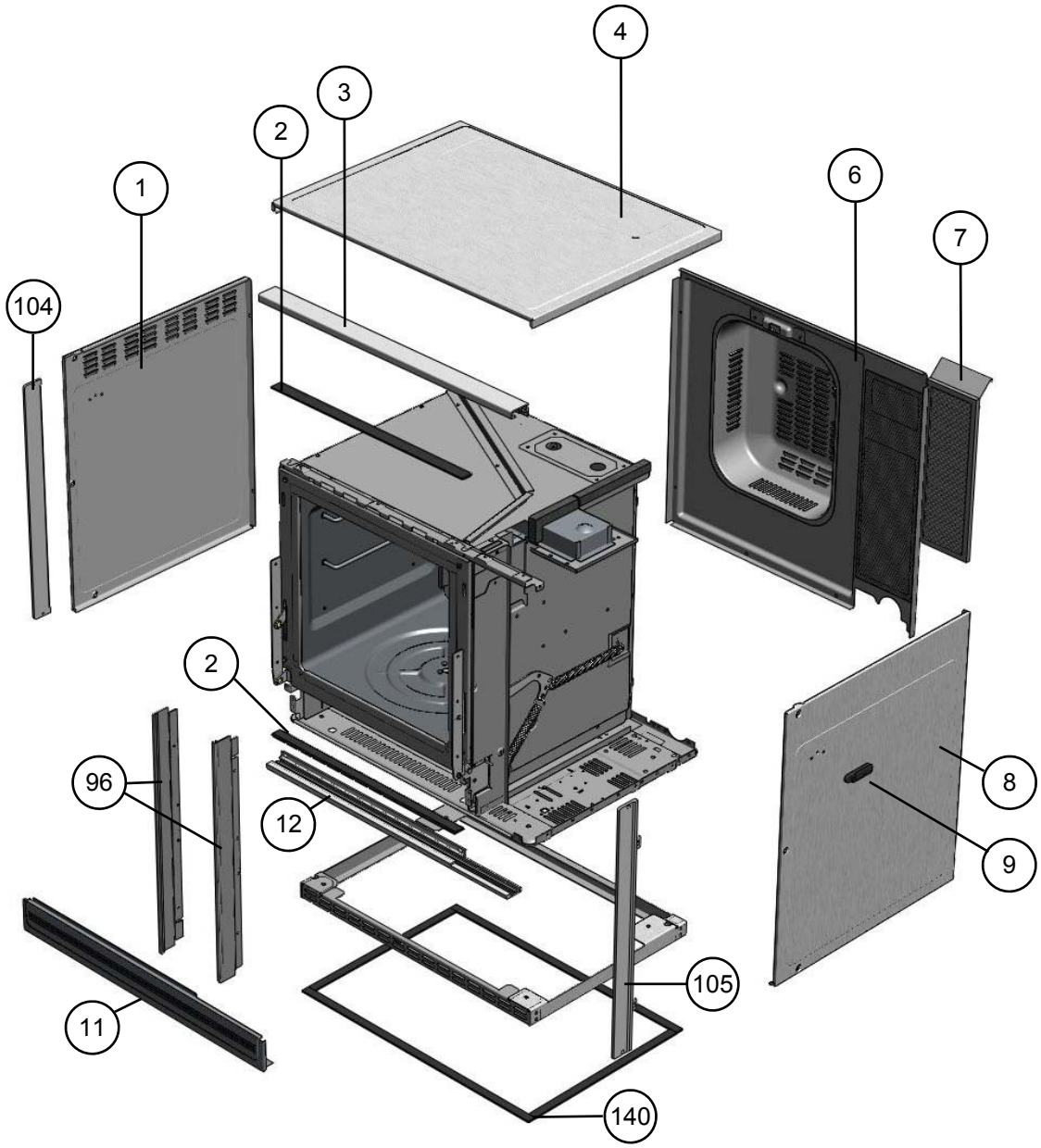




Check that microswitches **SW1**,**SW2** and **SW3** are in the **CLOSED** [ON] position and the Multimeter reads a **minimal resistance.**

If the meter reads Open Circuit, remove the 1mm spacers and repeat steps 1-4 moving the switch assemblies very slightly further down.
This procedure may need to be repeated several times to achieve a satisfactory arrangement.

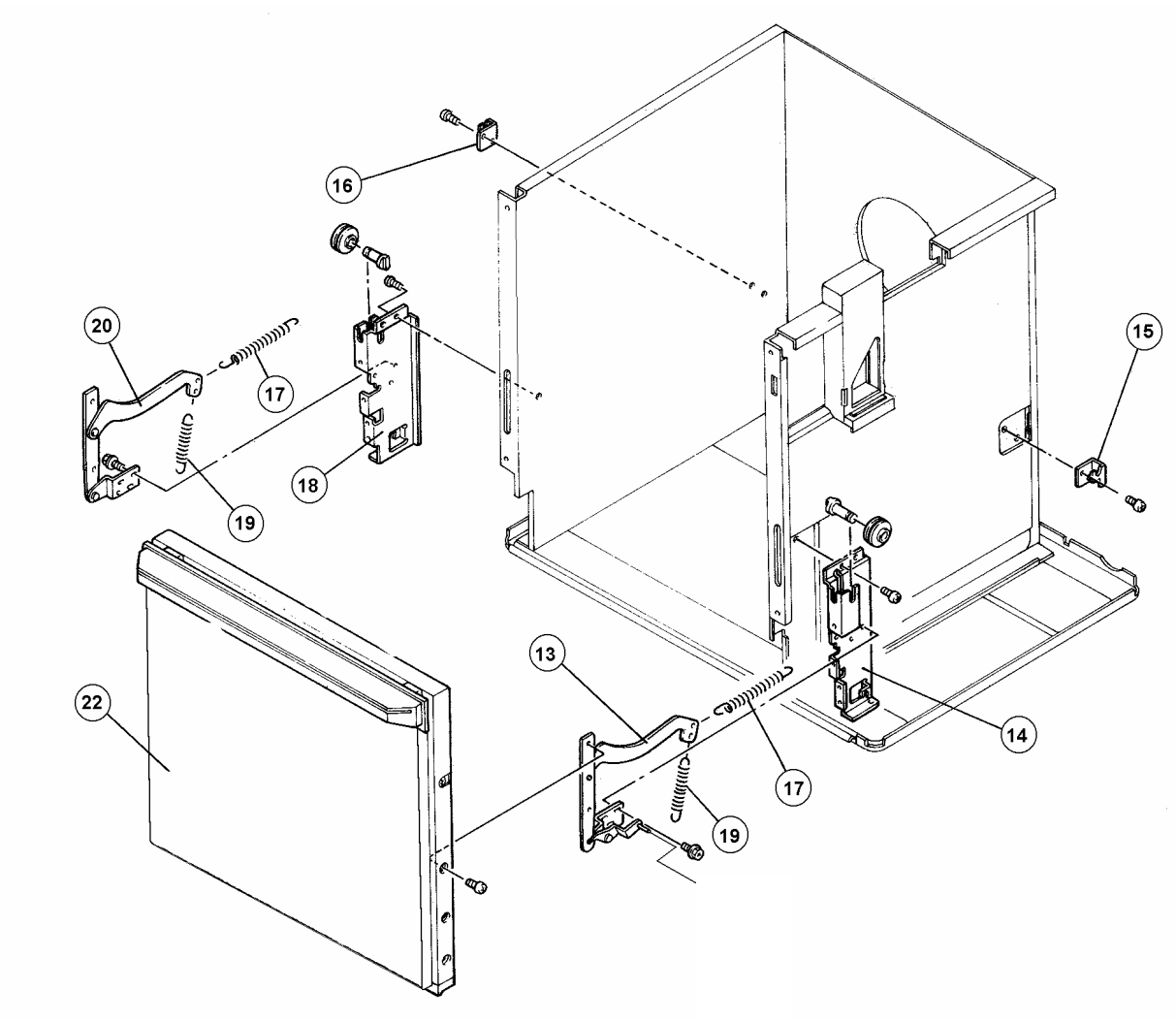
Principal components: casework



1	Side Panel (L/H)	MC3134
2	Ferrite	RMC6773
3	Upper Trim	MC3120MC
4	Top Plate	RMC6759EMC
6	Rear Panel	MC3769MC
7	Air Filter	MC3155
8	Side Panel (R/H)	MC3145

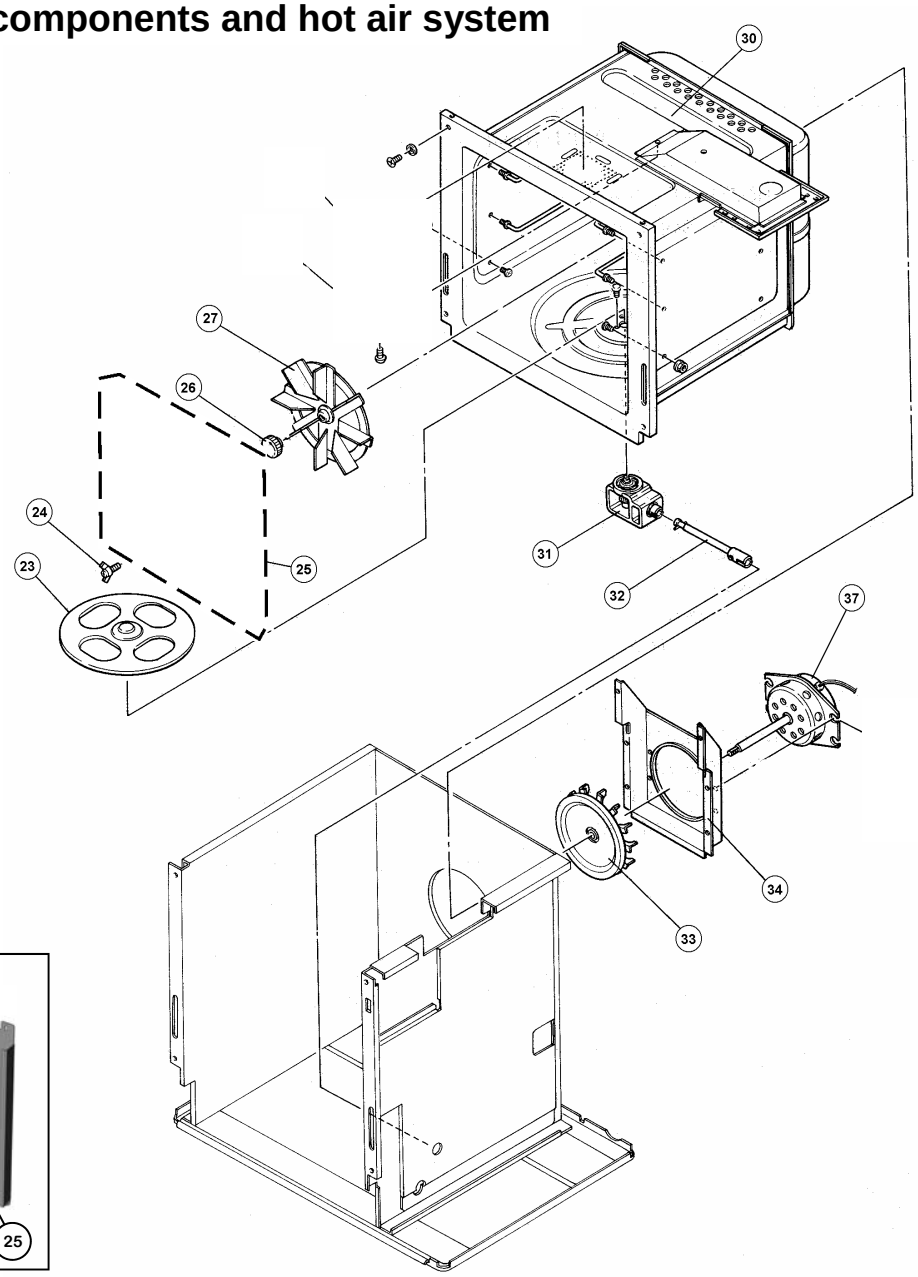
9	Handle Hanger	RCK6319
11	Front Lower Panel	MC3047
12	Lower Trim	MC3122
96	PCB Retainer	40H0084
104	Side Trim LH	MC3789MC
105	Side Trim RH	MC3121
140	Rubber Base seal long Rubber Base seal short	40H0259 40H0260

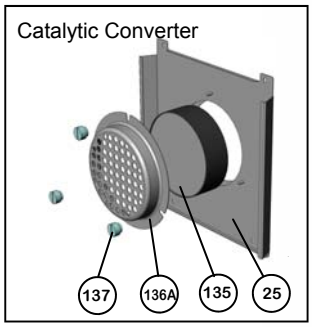
Door mechanism



13	Door Stay (R/H)	MC3040
14	Hinge Body	MC30121X02
15	Hook (A)	RMC66171
16	Hook (B)	RMC66172
17	Door Spring (B)	MC3068X01
18	Hinge Body (L/H)	MC30122X01
19	Door Spring (A)	MC3067
20	Door Stay (L/H)	MC3046
22	Solid Door Assy Silver	MC3230MCX02

Oven cavity components and hot air system

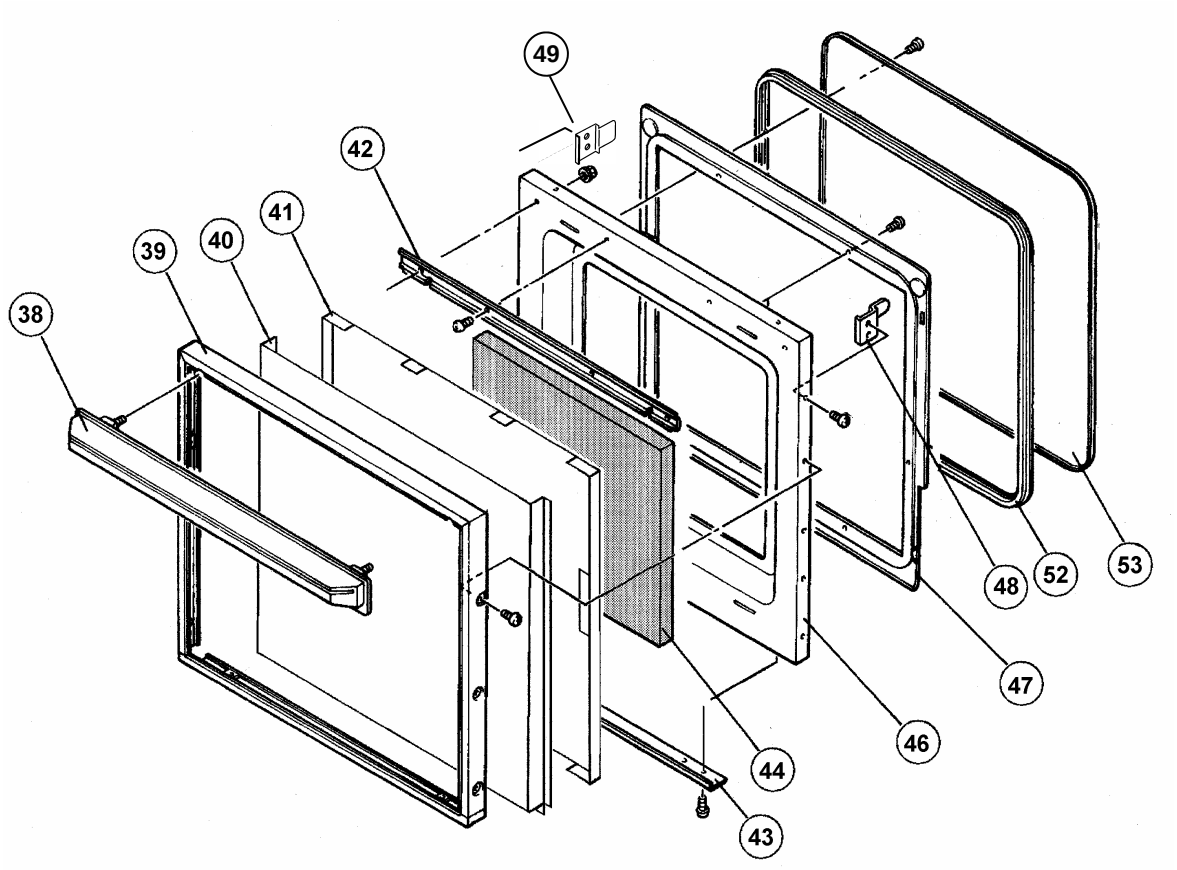




23	Turntable Disc	RMC7340X01
24	Baffle Plate Bolt	CP30326
25	Baffle Plate	MC3018
26	Fan Fixing Cap	RCK7617
27	Convection Fan	MC3111
30	Oven Body	MC3750MC
31	Gearbox	MC3216
32	Shaft	RMC7391X01
33	Motor Cooling Fan	RMC7310

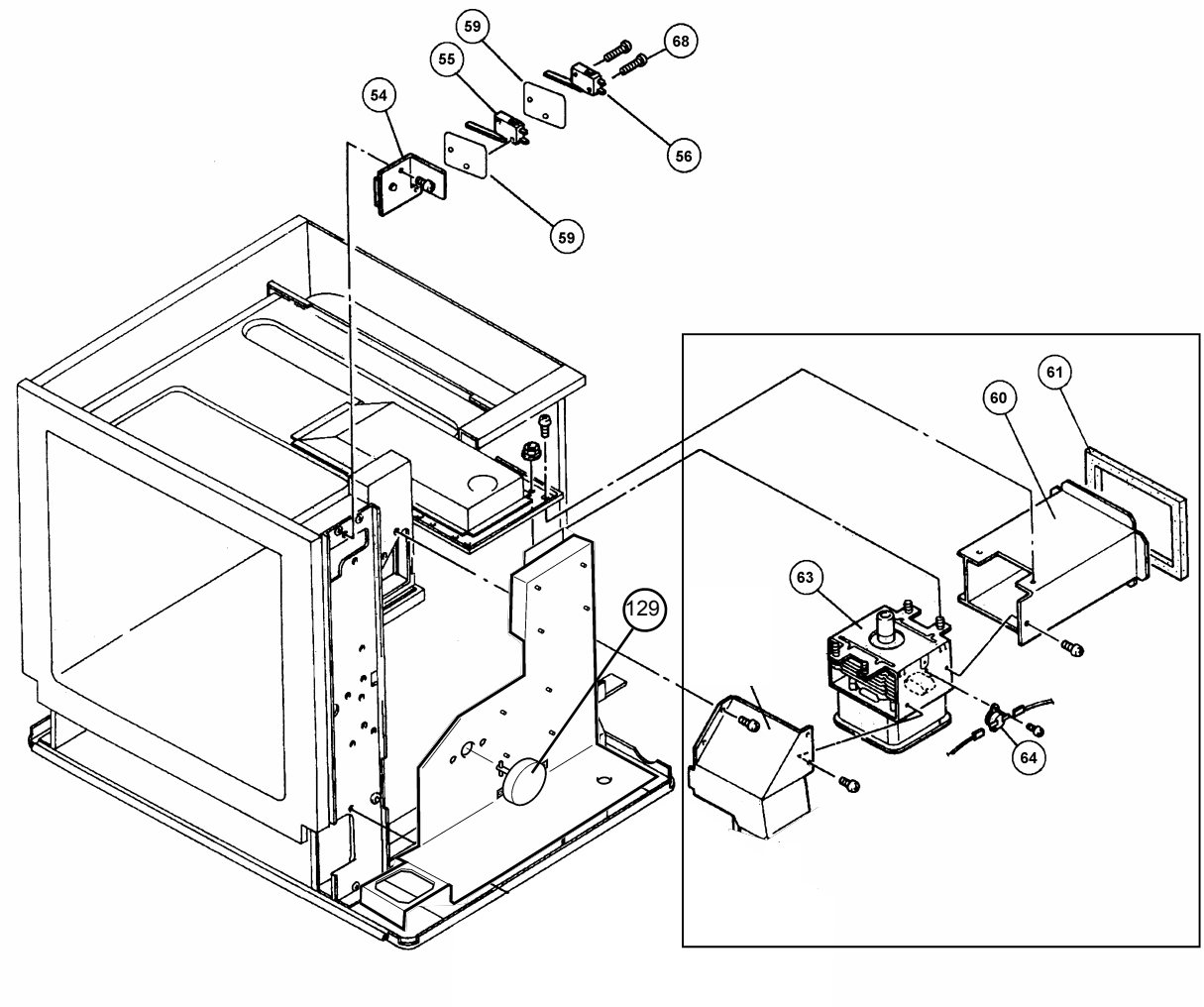
34	Motor Bracket	RMC7307X01
37	Convection Motor	MC3730MOD
135	Catalytic Converter	31Z1245
136A	Vent Plate	40H0236
137	Thumb nut	31Z4031

Oven door assembly



22	Solid Door Assy.	MC3230MCX02
38	Door Handle Silver	RBR1285048
40	Door Cover Outer	40H0080
41	Inner Panel	40H0081
42	Door Reinforcement	RMC70722
43	Door Frame (B)	MC3055
44	Insulation Wrap	32Z0001
46	Door Base Silver	MC3031X05
47	Door Cover	MC3064X01
48	Plate - Door Switch RHS	MC3056
49	Plate - Door Switch LHS	MC0562MC
52	Packing (B)	MC3065
53	Door Rear Plate	MC3229

Door Interlock RHS, Magnetron & Stirrer Motor



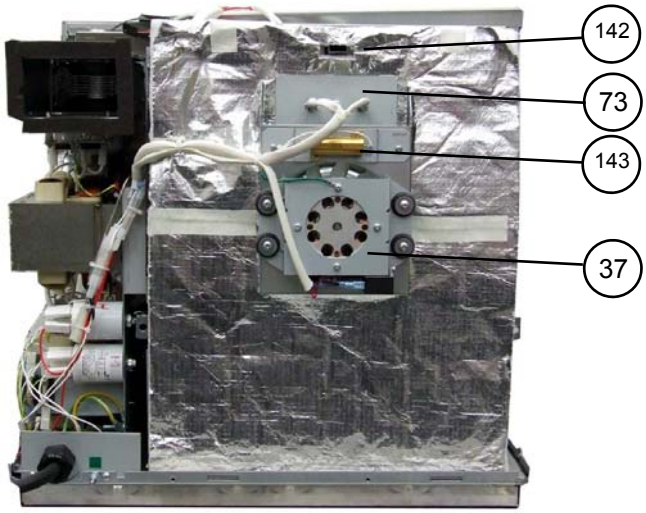
54	Door Switch Bracket	40H0023
55	Microswitch SW4	30Z0240
56	Microswitch SW5	30Z0240
59	Microswitch Insulator	31Z0115
60	Outlet Duct	MC3037

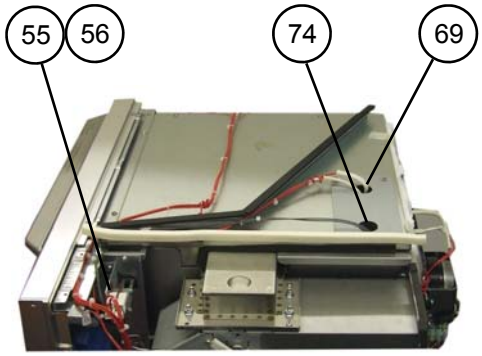
61	Foam Tape	31Z0042
63	Magnetron	30Z1349
64	Magnetron Thermal trip	30Z0088
129	Turntable Motor	11H0110

Principal Components LHS & Rear view:

Microswitches

57	Secondary Microswitch SW3	30Z0240
117	Axial fan	11H0075
138	Primary Microswitch SW2	30Z1396
139	Monitor Microswitch SW1	30Z1395

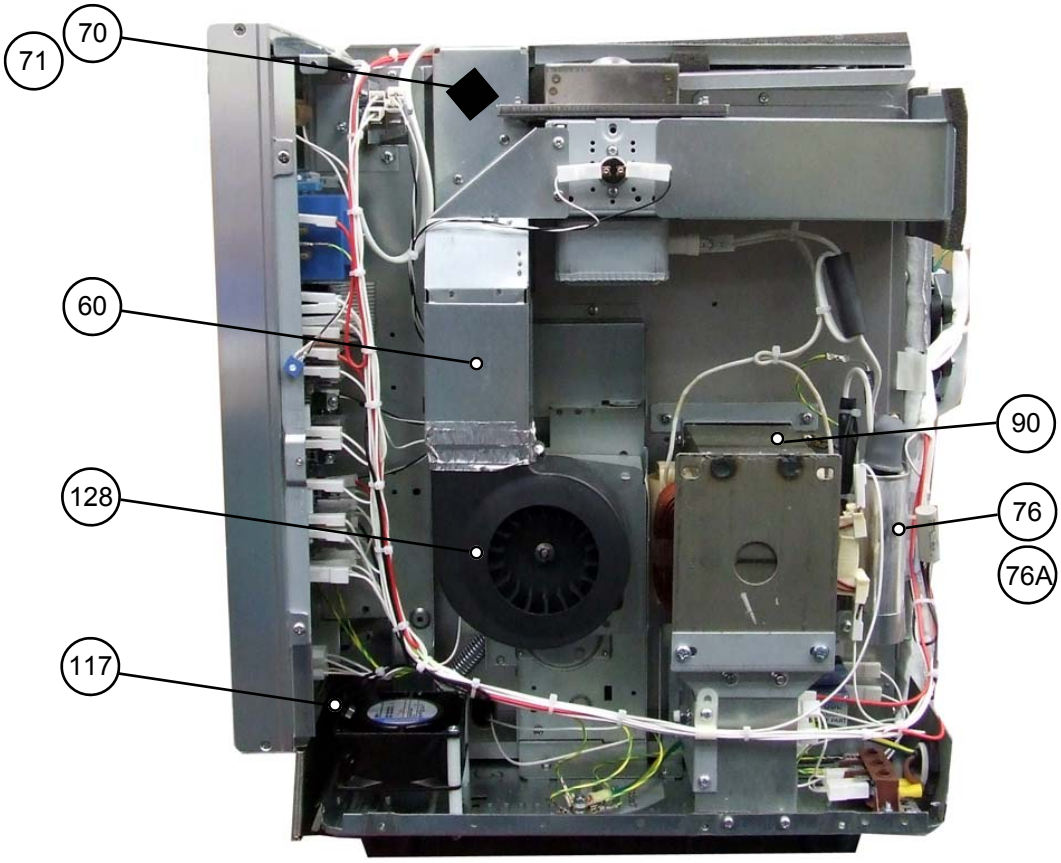




37	Hot Air Motor	MC3730MOD
55	Microswitch SW4	30Z0240
56	Microswitch SW5	30Z0240
69	Thermal cut-out switch	30Z1024
73	Heater Element 240V	40H0009
74	Temperature Sensor	30Z1419
142	Exhaust steam pipe	MC3773
143	Motor Resistor Assembly[1]	11H0122

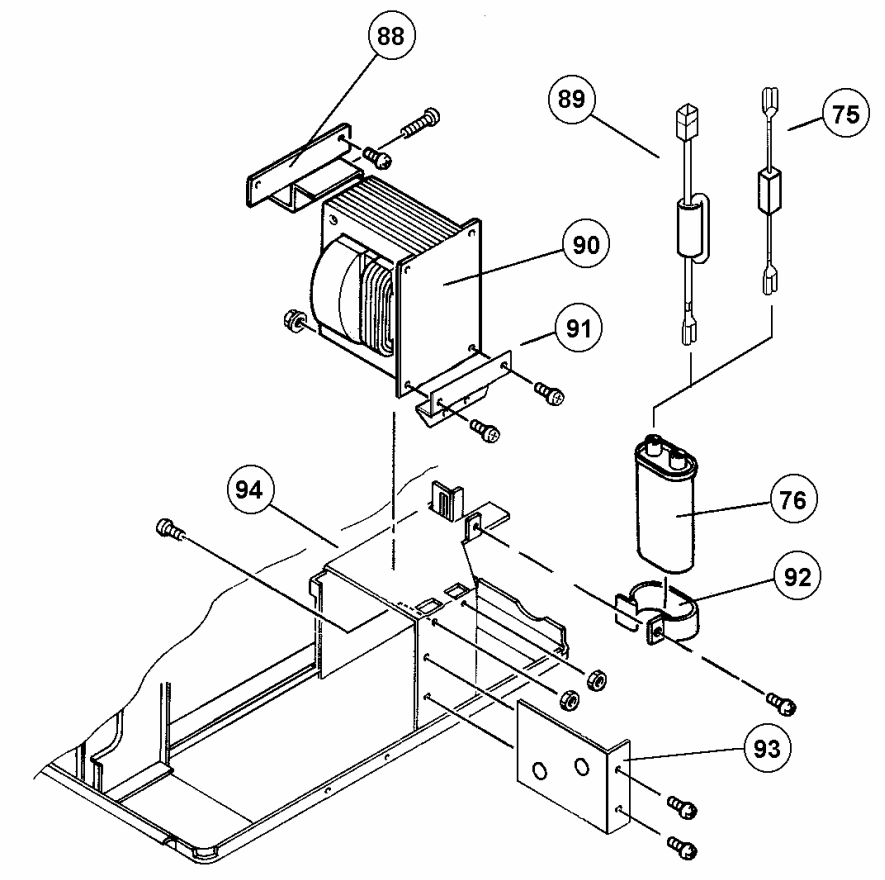
Note:
1. The 270Ω Resistor is required to drop the supply voltage to the Convection Fan Motor to 208V.

Principal Components RHS 1 : Models _ EE5, _ XE5, [CD2]



60	Outlet Duct	MC3037
70	Bridge Rectifier	341520
71	No. 8 Screw	31Z3107
76	HT Capacitor 0.75uF 2500V	30Z1329
76A	Capacitor Clip	30Z1261
90	Transformer 208-240 50Hz	30Z1233
117	Axial Fan	11H0075
128	Cooling Fan 240V 50Hz	11H0091

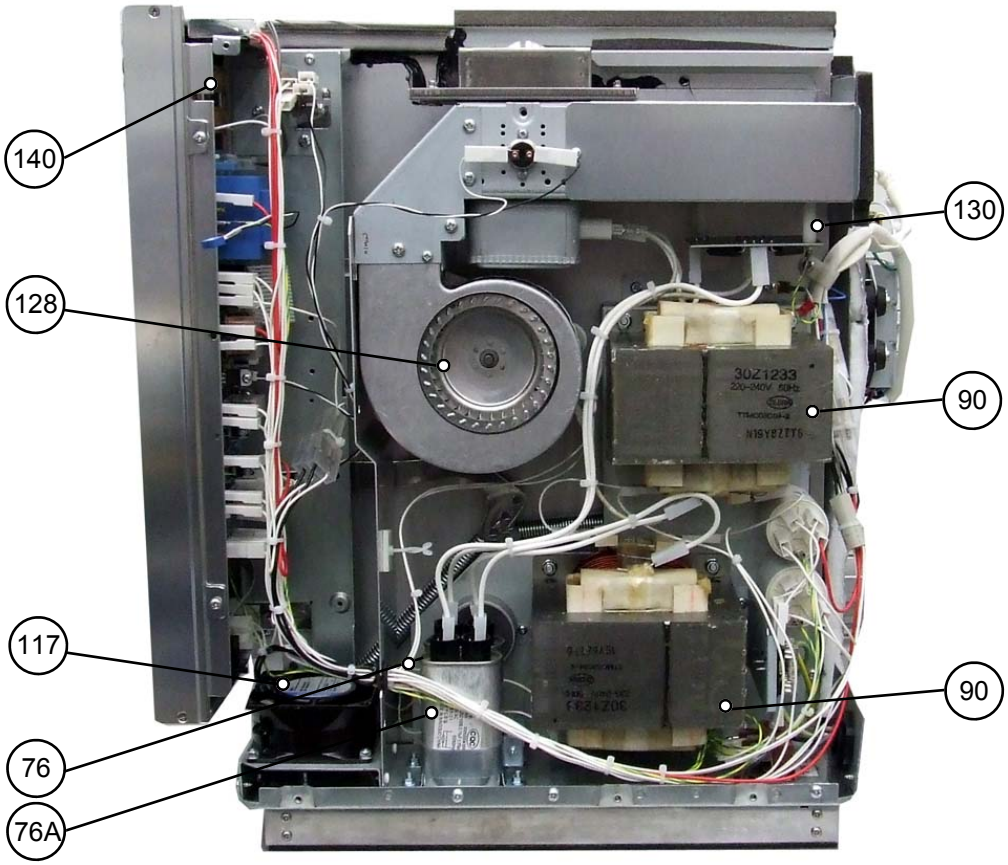
Principle components RHS 2: _ EE5, _ XE5



□

75	HV Diode Assembly	11H0010
76	HT Capacitor 0.75uF 2500V	30Z1329
88	HT Transformer Top Bracket	MC3127
89	HV Lead Assembly, Ferrite	11H0025
90	Transformer 208-240V 50Hz	30Z1233
91	HT Transformer Bottom Bracket	40H0070
92	Capacitor Band	RMC7215
93	Filter Bracket	40H0065
94	HT Transformer Support Bracket	MC3024

Principle components RHS 3: _ XX5, _XX52

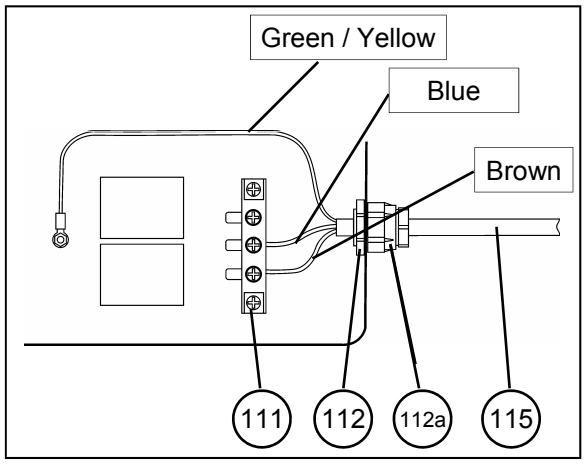


76	HT Capacitor 0.75uF 2500V	30Z1329
76A	Capacitor Clip	30Z1261
90	Transformer 208-240 60Hz	30Z1233
117	Axial Fan	11H0075
128	Cooling Fan 208V 50Hz	30Z1128
130	Diode Board	11H0058
140	Potentiometer[1]	11H0058

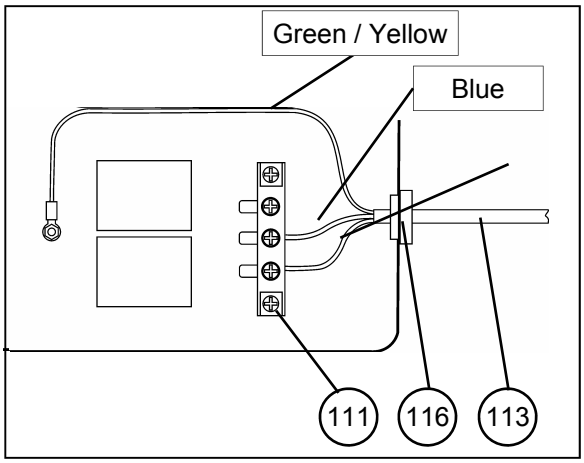
Note:
1. The Potentiometer adjusts the cavity set point temperature

Input wiring, filters and fuses 1

Model 1003__XE5, XD5



Model 1003__EE5, CD2



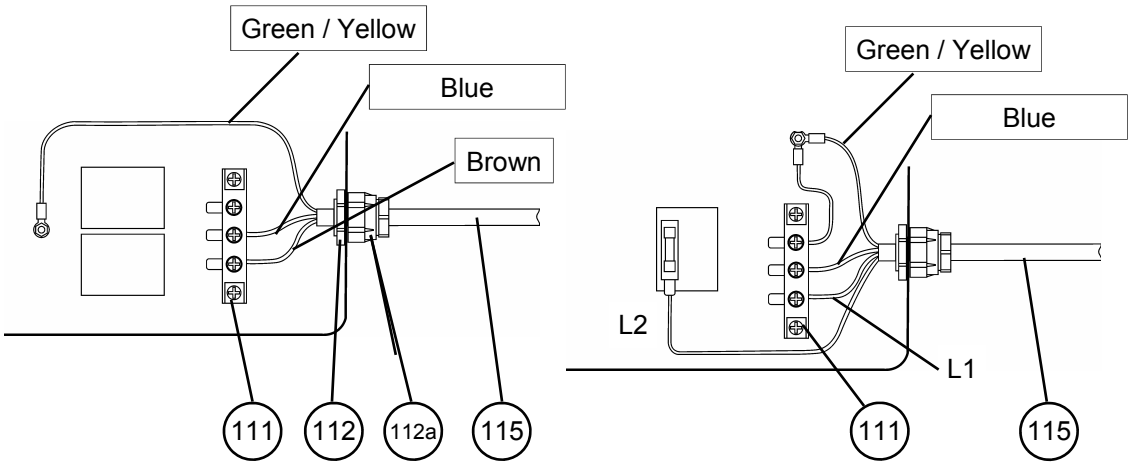
111	Mains Input Block	31Z0328
112	Cable Gland	31Z1070
112A	Cable Gland Nut	31Z1082
115	XE5 Input Cable Assembly	302030
116	Strain Relief Grommet	31Z1036

	Model: UK	Cable Assembly
113	_ EE, _CD2	10H0012
113	_XE5 [Single phase]	10H0011
	Europe	
113	_XE5 [Single phase]	10H0064

77	Microwave Mains Filter 16A	30Z1340
78	Heater Mains Filter 16A	30Z1340
79	Fuse Cover	20Z1080
80	Fuse 10A HRC	30Z0217
81	Fuse Holder 1”	30Z0231
82	Fuse 13A	30Z0456

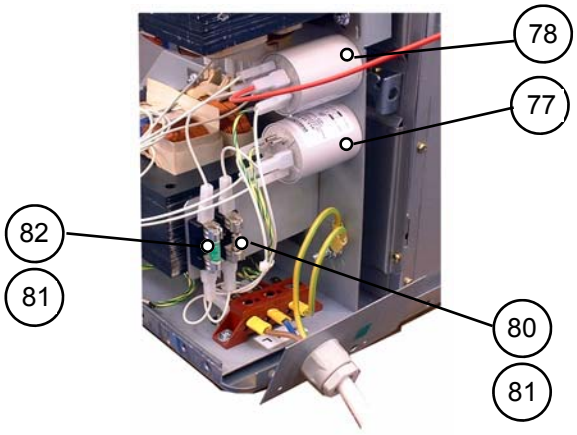
Input wiring, filters and fuses 2

Model RMC1003__XX5, XX52



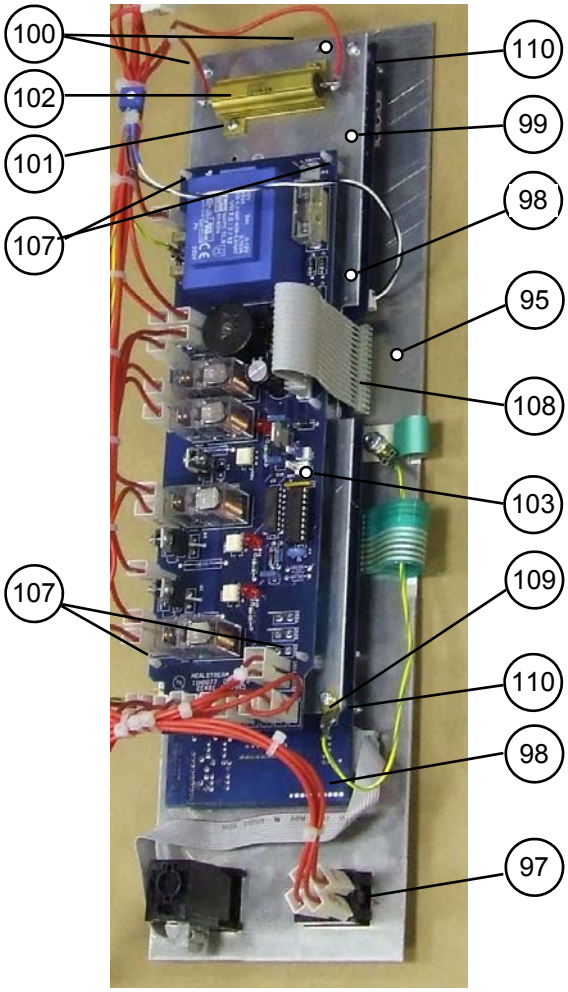
111	Mains Input Block	31Z0328
112	Cable Gland	31Z1070
112A	Cable Gland Nut	31Z1082
113	Input Cable Assembly	31Z0220
116	Strain Relief Grommet	31Z1036

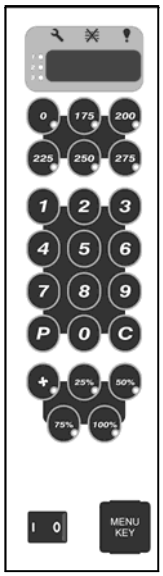
	Model: UK	Cable Assembly
115	_ XX5 [Single phase]	10H0046
115	_XX52 [Twin phase]	10H0039
	Europe	
115	_XE5 [Single phase]	10H0065
115	_XX52 [Twin phase]	10H0063

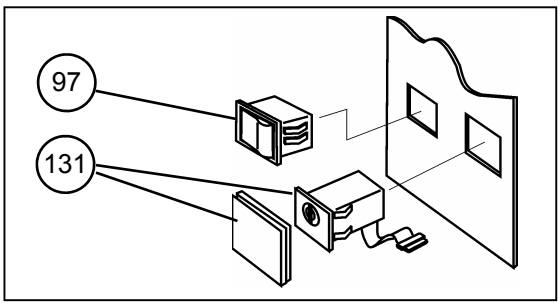


77	Microwave Mains Filter 16A	30Z1340
78	Heater Mains Filter 16A	30Z1340
80	Fuse 10A HRC	30Z0217
81	Fuse Holder 1”	30Z0231
82	Fuse 13A	30Z0456

Control Panel 1: Electronic controls assembly







95	Membrane Assy	See table
97	On/Off Switch	30Z0503
98	Logic Assy.	See table
99	Support Shield	40H0075
100	M3 x 5 Screw	31Z3106
101	No. 4 x 3/8” Screw	31Z3112
102	220R 50W Resistor	30Z0235
103	Relay Assy	See table
107	PCB Stand-off	31Z7010
108	15 Way Ribbon Connector	11Z0298
109	Single 0.25” Blade Tag Connector	309610
110	M3 Nylon Support	31Z0206
131	Menukey Assembly	10H0081

95	
Model	Membrane Assy
EE5, XE5, XX5	11H0060
XX5 Starbucks	11H0024
EE5, XE5, XX5 Menukey	11H0067

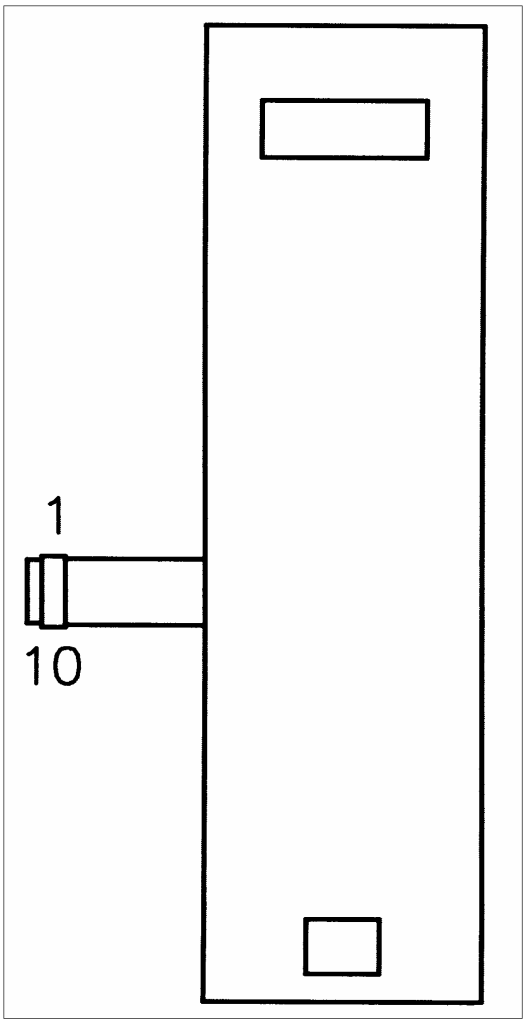
	98	103
Model	Logic PCB	Relay PCB
EE5,	11H0066	11C0286
CD2, XD2	N/A	11H0027
XE5, XX5	11H0066	11H0077

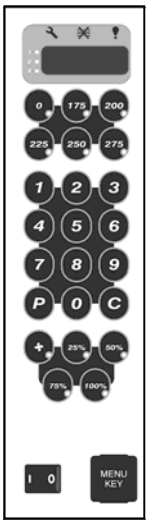
Control Panel 2: Membrane panel circuit

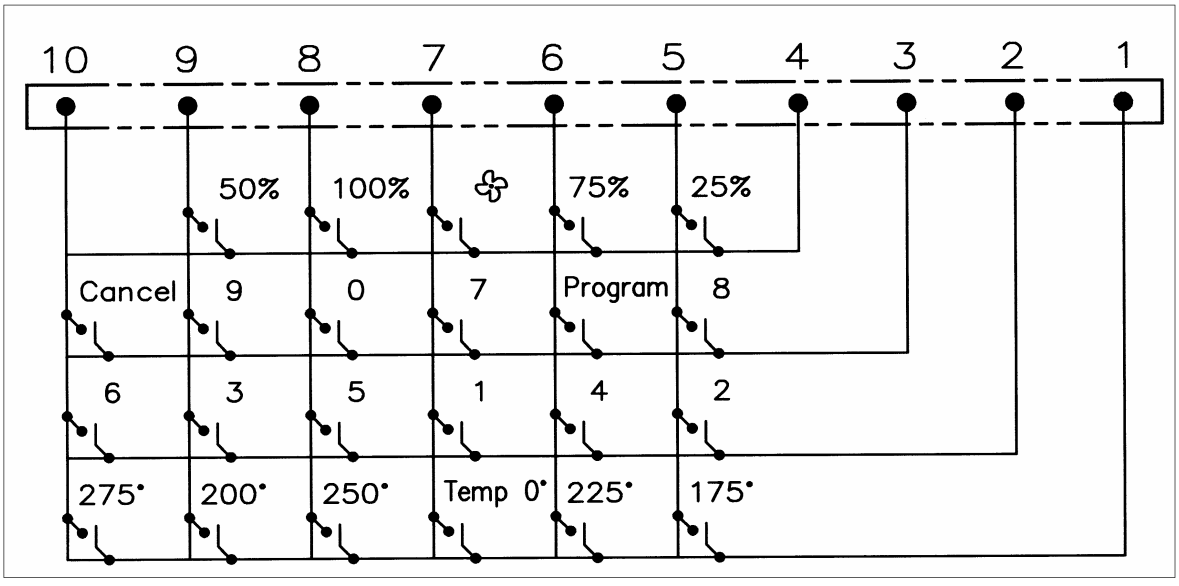
You will need:

A Digital Multi-meter (D.M.M.)

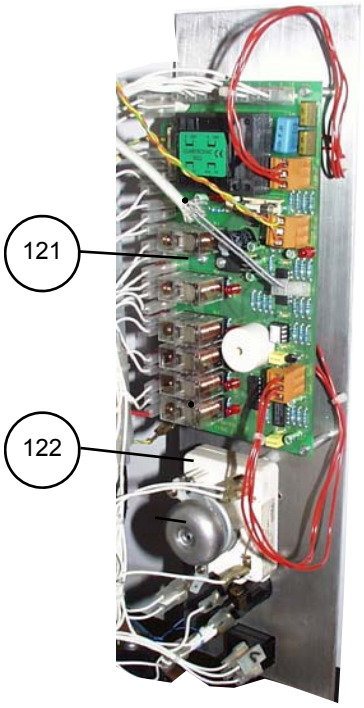
1. Isolate the oven from the mains supply.
2. Remove the Logic Assembly from the Control Panel Housing.
3. Unplug the membrane “tail” from the Logic PCB Assy.
4. Using a D.M.M., check for continuity between the correct terminals when the pads are pressed.
5. When the panel has been tested, re-assemble and re-test the control housing.

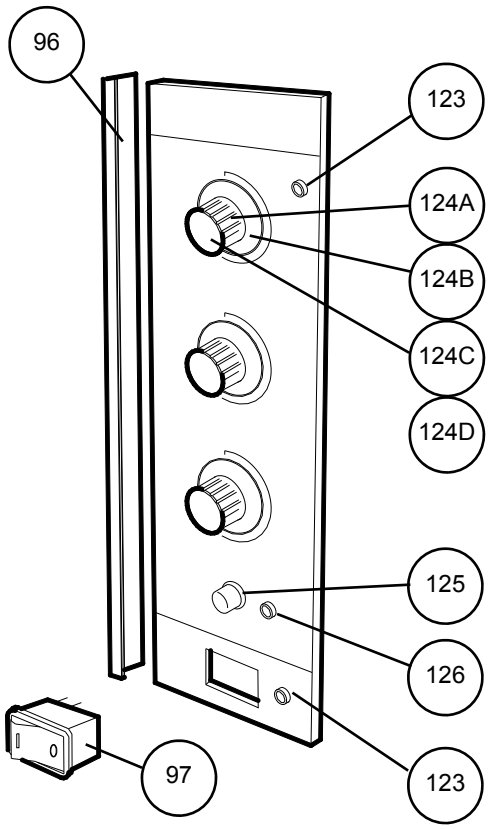


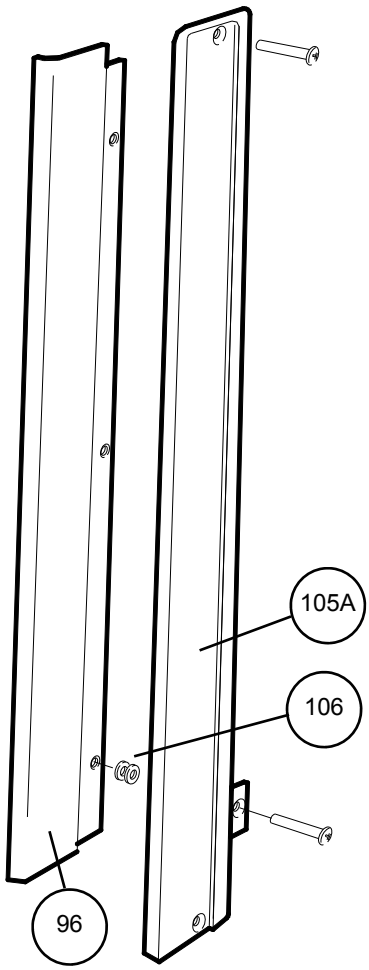




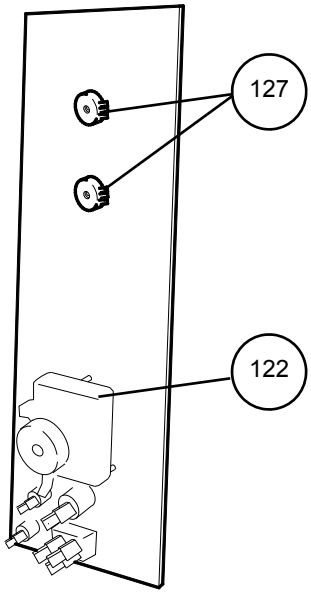
Control Panel 3: Manual control assembly







96	PCB Retainer LH	40H0084
97	On/Off Switch	30Z0503
105A	Side Trim RH	MC31212
106	M5 Flat Washer	31Z5004
121	PCB Assembly	11H0027
122	Timer	30Z0991
123	Amber Neon	316031
124A	Control Knob Black	313020
124B	Control Knob Skirt Red	313160
124B	Control Knob Skirt Blue	31Z1216
124C	Control Knob Cap Red	313220
124C	Control Knob Cap Blue	31Z1217
124D	Control Knob Shaft Adaptor	313030
124E	Control Knob Assy Black/Red	11C0173
124E	Control Knob Assy Blue	11C0406
125	Pushbutton (Start)	31Z0349
126	Red Neon	316030
127	Potentiometer	40C0892



Control Board not shown for clarity

Part number identification chart 1

1	SIDE PANEL (L/H)	MC3134
2	FERRITE	RMC6773
3	UPPER TRIM	MC3120MC
4	TOP PLATE	RMC6759EMC
6	REAR PANEL	MC3769MC
7	AIR FILTER	MC3155
8	SIDE PANEL (R/H)	MC3145
9	HANDLE HANGER	RCK6319
11	FRONT LOWER PANEL	MC3047
12	LOWER TRIM	MC3122
13	DOOR STAY (R/H)	MC3040
14	HINGE BODY	MC30121X02
15	HOOK (A)	RMC66171
16	HOOK (B)	RMC66172
17	DOOR SPRING (B)	MC3068X01
18	HINGE BODY (L/H)	MC30122X01
19	DOOR SPRING (A)	MC3067
20	DOOR STAY (L/H)	MC3046
22	SOLID DOOR ASSY	MC3230MCX02
23	TURNTABLE DISC	RMC7340X01
24	BAFFLE PLATE BOLT	CP30326
25	BAFFLE PLATE	MC3018
26	FAN FIXING CAP	RCK7617
27	FAN	MC3111
30	OVEN BODY	MC3750MC
31	GEARBOX	MC3216
32	SHAFT	RMC7391X01
33	COOLING FAN	RMC7310
34	MOTOR BRACKET	RMC7307X01
37	HOT AIR MOTOR	MC3730MOD
38	DOOR HANDLE SILVER	RBR1285048
40	DOOR OUTER	40H0082

41	INNER INSULATION PANEL	40H0081
42	DOOR REINFORCEMENT	RMC70722
43	DOOR FRAME (B)	MC3055
44	INSULATION WRAP	32Z0001
46	DOOR BASE SILVER	MC3031X05
47	DOOR COVER	MC3064X01
48	PLATE - DOOR SWITCH RHS	MC3056
49	PLATE - DOOR SWITCH LHS	MC0562MC
52	PACKING (B)	MC3065
53	DOOR REAR PLATE	MC3229
54	DOOR SWITCH BRACKET	40H0023
55	CONVECTION MOTOR MICROSWITCH SW4	30Z0240
56	LOW VOLTAGE MICROSWITCH SW5	30Z0240
57	SECONDARY MICROSWITCH SW3	30Z0240
59	MICROSWITCH INSULATOR	31Z0115
60	OUTLET DUCT	MC3037
61	FOAM TAPE	31Z0042
63	MAGNETRON	30Z1349
64	MAGNETRON THERMAL TRIP	30Z0088
69	THERMAL CUT OUT SWITCH	30Z1031
70	BRIDGE RECTIFIER	341520
71	NO. 8 SCREW	31Z3107
72	M5 SCREW	101825
73	240V HEATING ELEMENT	40H0009
74	TEMPERATURE SENSOR	30Z1419
76	HT CAPACITOR 0.75µF	30Z1329
76A	CAPACITOR CLIP	31Z1261

Part number identification chart 2

77	M'WAVE MAINS FILTER 16A	30Z1340
78	MAINS FILTER 16A	
81	FUSE HOLDER	30Z1178
82	FUSE 20A	30Z1177
90	TRANSFORMER 208-240V 50Hz	30Z1233
95	MEMBRANE ASSEMBLY	See table
96	PCB RETAINER	40H0084
97	ON/OFF SWITCH	30Z0503
98	LOGIC ASSY.	See Table
99	SUPPORT SHIELD	40H0075
100	M3 X 5 SCREW	31Z3106
101	NO. 4 X 3/8" SCREW	31Z3112
102	220R 50W GOLD RESISTOR	30Z0235
103	RELAY PCB ASSY	See Table
104	SIDE TRIM LH	MC3789MC
105	SIDE TRIM RH	MC3121
106	M4 FLAT WASHER	31Z5004
107	PCB STAND-OFF	31Z7010
108	15 WAY RIBBON CONNECTOR	11Z0298
109	SINGLE 0.25" CONNECTOR	309610
110	M3 NYLON SUPPORT	31Z0206
111	MAINS INPUT BLOCK	31Z0328
112	CABLE GLAND	31Z1070
112A	CABLE GLAND NUT	31Z1082
113	POWER CABLE ASSEMBLY	11H0115
116	STRAIN RELIEF GROMMET	31Z1036

117	80MM AXIAL FAN	11H0075
128	COOLING FAN 208V 50Hz	30Z1128
129	TURNTABLE MOTOR	11H0110
130	DIODE BOARD	11H0058
131	MENUKEY ASSEMBLY	10H0081
133	INLET DUCT	MC3793
135	CATALYTIC CONVERTER	31Z1245
136A	VENT PLATE	40H0221
137	THUMB NUT	31Z4031
138	PRIMARY MICROSWITCH SW2	30Z1396
139	MONITOR MICROSWITCH SW1	30Z1395
140	RUBBER BASE SEAL LONG RUBBER BASE SEAL SHORT	40H0259 40H0260
141	POTENTIOMETER	11H0058
142	EXHAUST STEAM PIPE	MC3773
143	MOTOR RESISTOR ASSY	11H0122

CD2 Models

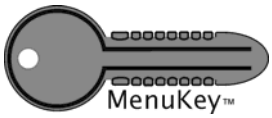
104	PCB Retainer RH	40H0084
121	PCB Assembly	11H0027
122	Timer	30Z0991
123	Amber Neon	316031
124A	Control Knob Black	313020
124B	Control Knob Skirt Red	313160
124B	Control Knob Skirt Blue	31Z1216
124C	Control Knob Cap Red	313220
124C	Control Knob Cap Blue	31Z1217
124D	Control Knob Shaft Adaptor	313030
124E	Control Knob Assy Black/Red	11C0173
124E	Control Knob Assy Blue	11C0406
125	Pushbutton (Start)	31Z0349
126	Red Neon	316030
127	Potentiometer	40C0892

Model	98	103
	Logic PCB	Relay PCB
EE5,	11H0066	11C0286
CD2, XD2	N/A	11H0027
XE5, XX5	11H0066	11H0077

95	
Model	Membrane Assy
EE5, XE5, XX5	11H0060
XX5 Starbucks	11H0024
EE5, XE5, XX5 Menukey	11H0067

APPENDIX 1: MenuKey™ Download Procedure

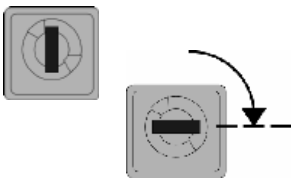
The MenuKey System automatically changes all the cooking programs on the numbered icon pads with the turn of a key.

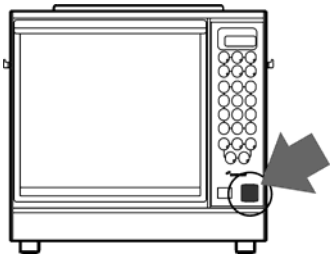


To change the menus on the oven:

1 Ensure the power switch is **off**.

2 Lift the MenuKey cover in the front panel of the oven and put the key in the keyhole Turn the key clockwise to the stop (¼ turn).
Do not remove the key at this stage.





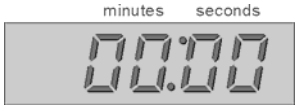
3 Switch the power switch **on**.
The oven will now go through the program download sequence by displaying the following:

The Key Code example: Key C02

The number of programs and each program number on the key.

example: 27 Programs

When the display shows 00:00 remove the key and close the cover. The oven is now ready to use with the new programs.



EPS - FAIL - REDO
External Program System ERROR.
If the key is removed before the download is complete or the process is interrupted the display shows “EPS” then “FAIL” then “REDO”. Switch the oven off and begin the MenuKey download again.

To confirm the download is successful
Switch off the oven.
Switch on and the display briefly will show the following:

1. The new key code
2. 00:00 (oven ready to use)

If the download is not successful the key number will not be displayed and if the program pads are pressed an E3 error will display.

APPENDIX 2: Cleaning Procedure

Follow the SAFETY INSTRUCTIONS at the beginning of this manual.

- **ALWAYS switch off at the electrical supply and allow oven to cool for at least 20 minutes before cleaning**
- **As required, remove carousel and wipe out spillages with disposable paper wipes**
- **NEVER use steel wool, knives or harsh abrasives on any part of the oven**

As with all electrical appliances, it is wise to have the electrical connections inspected periodically.

Faults arising from neglect or misuse, including use without clean filters in place, are not covered by the guarantee. Service visits as a result of such faults will be chargeable.

Merrychef recommends the use of approved Merrychef Oven Cleaner and Merrychef Oven Protector.

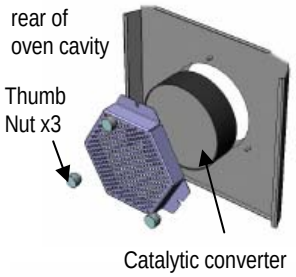
Cleaning the air filter oven cavity, and door

DO NOT SPRAY ANY CLEANING FLUID DIRECTLY INTO THE CATALYTIC CONVERTER VENT HOLES AT THE REAR OF THE OVEN CAVITY, THIS WOULD CAUSE PERMANENT DAMAGE TO THE CATALYTIC CONVERTER

DO NOT USE THE OVEN WITHOUT A CLEAN AIR FILTER IN POSITION

1. Remove trays, racks, turntable and turntable disc from the oven cavity and air filter (on the rear panel) . Clean using non-caustic oven cleaner. Wash off using a clean cloth and plenty of clean, warm water. Dry using a fresh, clean cloth.

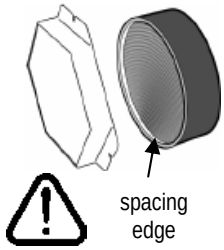
   To remove the catalytic converter at the rear of the cavity undo the three thumb nuts to release the cover plate and carefully lift out. Wash the catalytic converter in **CLEAN HOT WATER only,** do not use cleaning products which could cause permanent damage to the filter. Leave to dry.
   Clean the cover plate in non-caustic oven cleaner and dry using a fresh clean cloth.



2. Remove food particles from between the inside edge of the door and the front of the oven floor using a clean, dry brush (Location A). Apply non-caustic oven cleaner to interior surfaces except door seals and leave for the recommended time. Wash off using a clean cloth and plenty of clean, warm water. Dry using a fresh, clean cloth.
3. Wipe hinges with a clean, damp cloth.
   DO NOT apply lubricating oil to hinges.
4. Wipe door seals carefully with a clean damp cloth.
   Examine for signs of wear or damage.
5. Replace the Catalytic Converter and cover plate ensuring the face of the converter with the spacing edge is facing outwards to allow air to pass efficiently through the filter.Tighten up the three thumb nuts.
6. Replace all the parts and ensure the clean air filter is in place

A

If the door seals are damaged ,the oven must be repaired by an approved Service Engineer



Cleaning the control panel and exterior surfaces

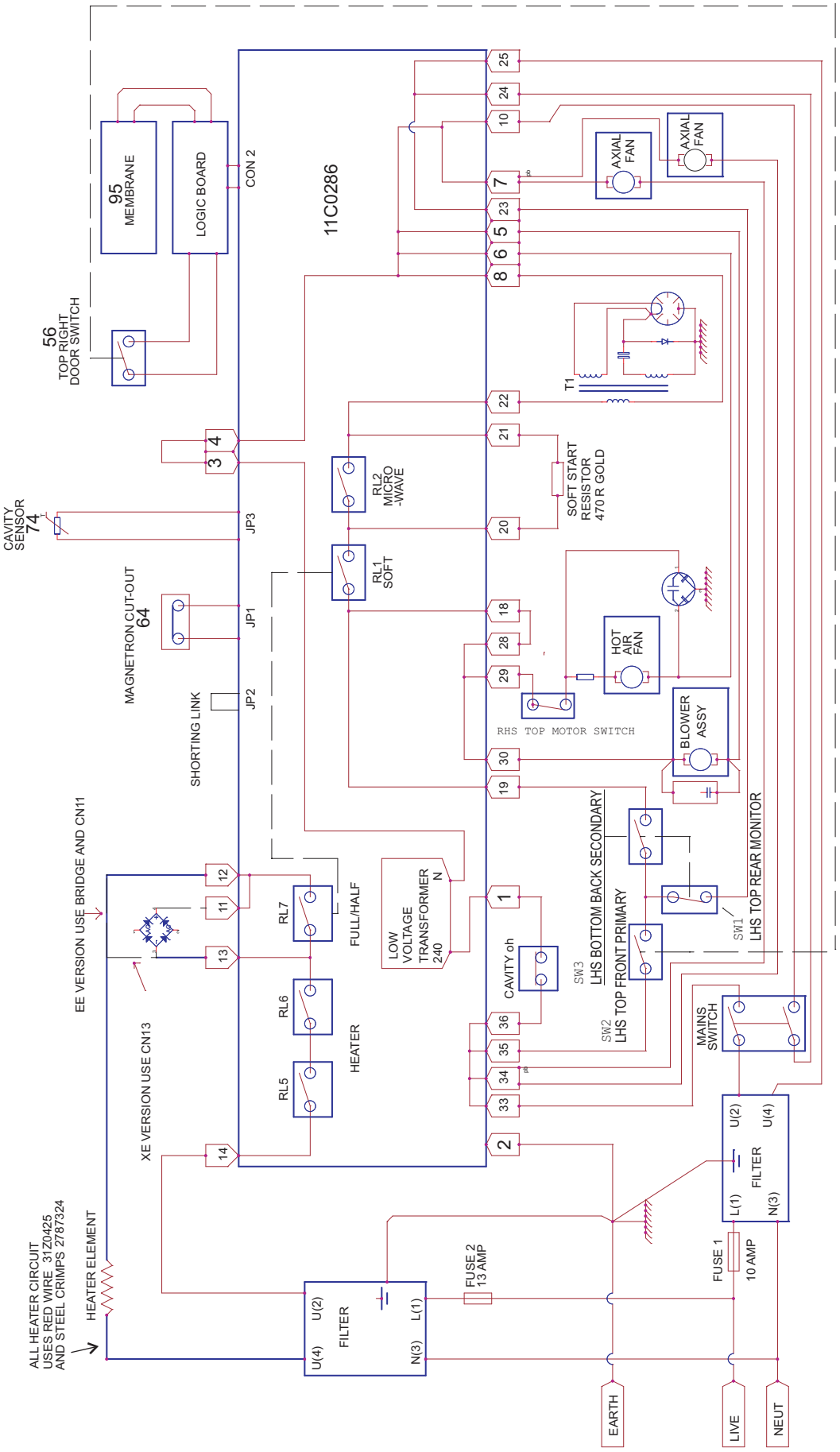
Wipe down regularly with a damp cloth.

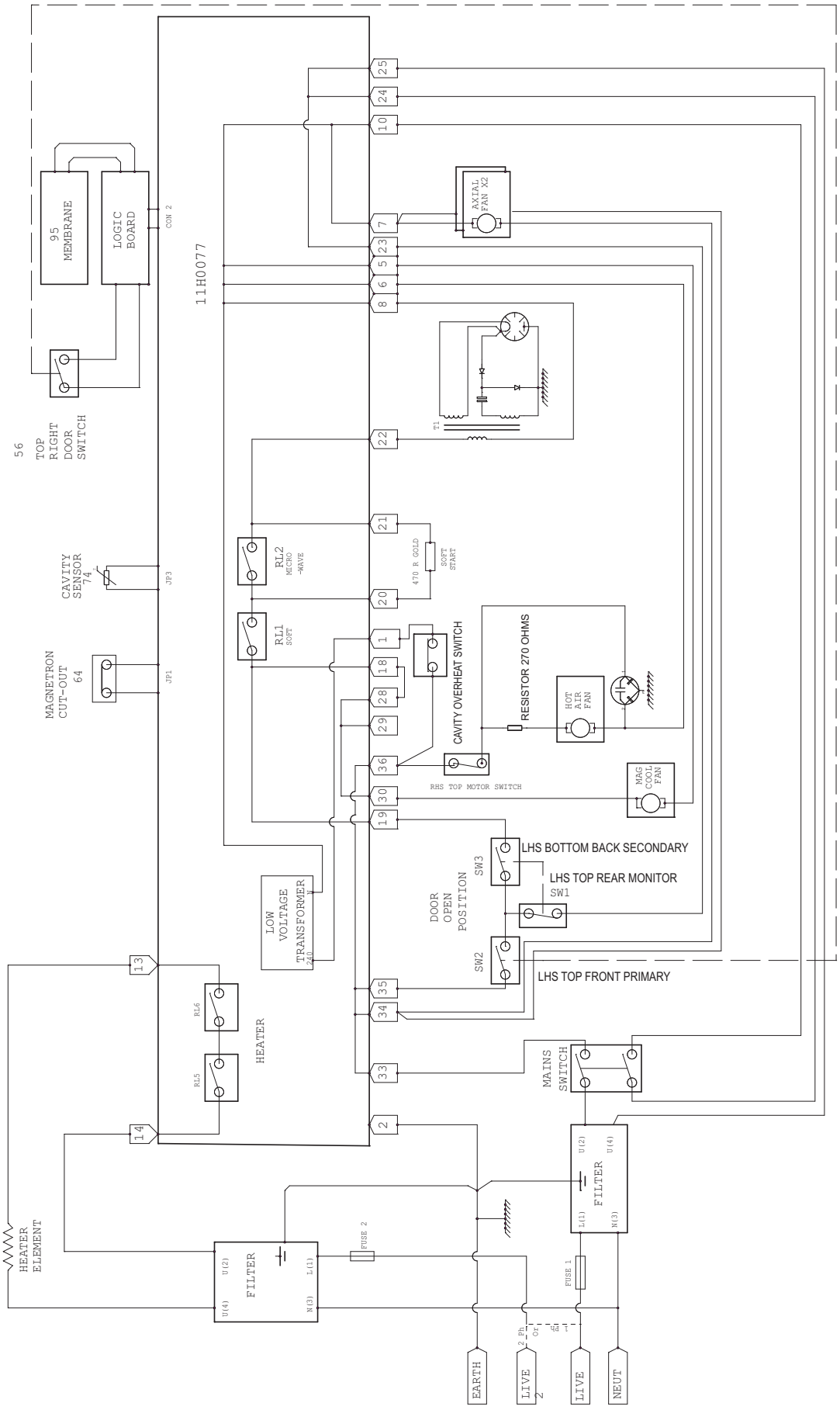
Hints and Tips for stubborn stains in the oven cavity

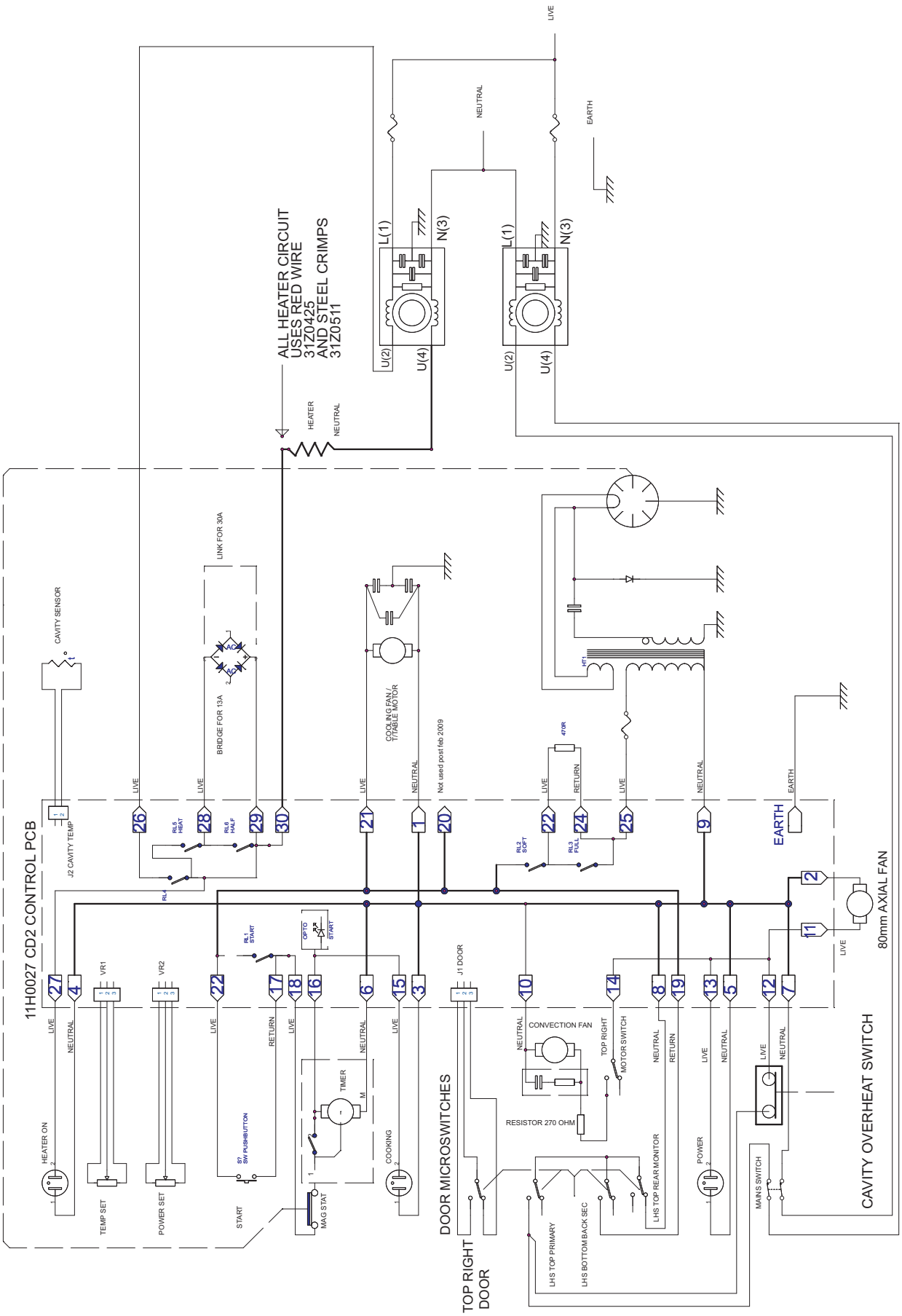
1. Switch on oven with microwave power only (without heat).
2. Place a container of water 2.5 Pints (1.5 litres) into the centre of the oven cavity.
3. Set microwave power to 100%.
4. Set timer to 30 minutes and press start button.
   At end of steam cycle, wipe out cavity with a clean cloth.

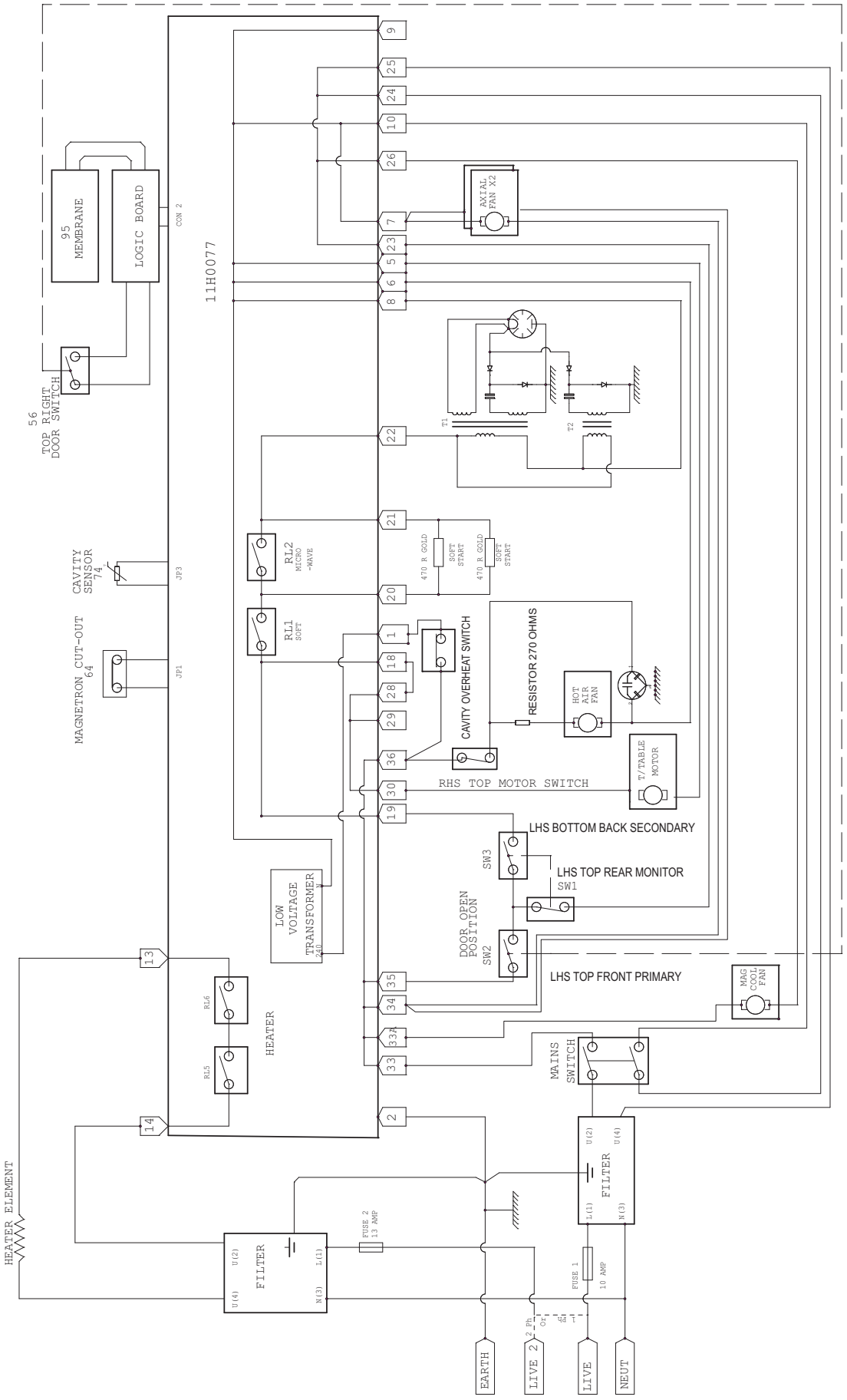
RECOMMENDED PARTS LIST: 240V 50Hz Models _EE5, _XE5, CD2,

RECOMMENDED PARTS LIST: 240V 50Hz Models _XX5, XX52


11C0286
95 MEMBRANE
LOGIC BOARD
CON 2
56 TOP RIGHT DOOR SWITCH
CAVITY SENSOR 74
MAGNETRON CUT-OUT 64
SHORTING LINK
JP1
JP2
JP3
RL1 SOFT
RL2 MICRO -WAVE
RL5
RL6
RL7
HEATER
FULL/HALF
LOW VOLTAGE TRANSFORMER 240
SOFT START RESISTOR 470 R GOLD
T1
AXIAL FAN
AXIAL FAN
HOT AIR FAN
BLOWER ASSY
RHS TOP MOTOR SWITCH
CAVITY oh
SW3
LHS BOTTOM BACK SECONDARY
SW2
LHS TOP FRONT PRIMARY
SW1
LHS TOP REAR MONITOR
MAINS SWITCH
FILTER
U(2)
U(4)
L(1)
N(3)
FUSE 1 10 AMP
FUSE 2 13 AMP
EE VERSION USE BRIDGE AND CN11
XE VERSION USE CN13
HEATER ELEMENT
ALL HEATER CIRCUIT USES RED WIRE 31Z0425 AND STEEL CRIMPS 2787324
EARTH
LIVE
NEUT


11H0077
95 MEMBRANE
LOGIC BOARD
CON 2
AXIAL FAN X2
56 TOP RIGHT DOOR SWITCH
T1
CAVITY SENSOR 74
JP3
RL2 MICRO -WAVE
470 R GOLD
SOFT START
RL1 SOFT
MAGNETRON CUT-OUT 64
JP1
CAVITY OVERHEAT SWITCH
RESISTOR 270 OHMS
HOT AIR FAN
RHS TOP MOTOR SWITCH
MAG COOL FAN
LHS BOTTOM BACK SECONDARY
SW3
LHS TOP REAR MONITOR
SW1
DOOR OPEN POSITION
SW2
LHS TOP FRONT PRIMARY
LOW VOLTAGE TRANSFORMER 240
RL6
RL5
HEATER
MAINS SWITCH
HEATER ELEMENT
FILTER
FUSE 2
FUSE 1
EARTH
LIVE
LIVE
NEUT


LIVE
NEUTRAL
EARTH
L(1)
N(3)
U(2)
U(4)
ALL HEATER CIRCUIT USES RED WIRE 3120425 AND STEEL CRIMPS 3120511
HEATER
NEUTRAL
11H0027 CD2 CONTROL PCB
CAVITY SENSOR
J2 CAVITY TEMP
LINK FOR 30A
BRIDGE FOR 13A
COOLING FAN / TT/ABLE MOTOR
Not used post feb 2009
RETURN
EARTH
80mm AXIAL FAN
CAVITY OVERHEAT SWITCH
VR1
VR2
TEMP SET
POWER SET
START
HEATER ON
COOKING
TIMER
MAG STAT
DOOR MICROSWITCHES
TOP RIGHT DOOR
CONVECTION FAN
RESISTOR 270 OHM
MOTOR SWITCH
LHS TOP PRIMARY
LHS BOTTOM BACK SEC
LHS TOP REAR MONITOR
POWER
MAINS SWITCH


95 MEMBRANE
LOGIC BOARD
CON 2
11H0077
56 TOP RIGHT DOOR SWITCH
AXIAL FAN X2
T1
T2
CAVITY SENSOR 74
JP3
MAGNETRON CUT-OUT 64
JP1
RL2 MICRO -WAVE
RL1 SOFT
470 R GOLD
SOFT START
CAVITY OVERHEAT SWITCH
RESISTOR 270 OHMS
HOT AIR FAN
TV/TABLE MOTOR
RHS TOP MOTOR SWITCH
LHS BOTTOM BACK SECONDARY
SW3
LHS TOP REAR MONITOR
SW1
DOOR OPEN POSITION SW2
LHS TOP FRONT PRIMARY
LOW VOLTAGE TRANSFORMER
240
MAG COOL FAN
MAINS SWITCH
RL6
RL5
HEATER
HEATER ELEMENT
FILTER
FUSE 2 13 AMP
FUSE 1 10 AMP
EARTH
LIVE 2
LIVE
NEUT